

# Module Six

## Using Human Development in Prevention

### Time

The anticipated time for the module is 4 hours.

### Learning Objectives

Participants will be able to:

- Acknowledge that changes occurring throughout people's lives have implications for prevention strategies.
- Become informed about the emotional development of humans based on emotional expressiveness and understanding.
- Become informed about the social development of humans based on thinking about self, thinking about others, and thinking about relationship between people.
- Become informed about the moral development of humans based on moral internalization, construction, and self-control.
- Identify prevention strategies that focus on human emotional, social, and/or moral development.
- Apply knowledge of the transformation of the adolescent brain to plan prevention programs.

### Materials and Preparation

1. Prepare an overhead projector or LCD projector with the appropriate slides.
2. Be ready to use the following information and work sheets:
  - **Changes**
  - **Emotional Development Chart**
  - **Social Development Chart**
  - **Moral Development Chart**
  - **Prevention Strategies**
  - **Brain Research and Adolescence**
3. For additional preparation read the following: The Primal Teen by Barbara Strauch and What Makes Teens Tick by Claudia Wallis.
4. Have handy a chart pad and markers

### Format of Facilitator Notes

Trainer instructions are in *italics*. Suggested narrative is in normal font.

## **Integrating the SPF throughout the SAPST**

Trainer instructions are in *italics*. Suggested narrative is in normal font. Many elements need to be considered when selecting prevention strategies. Strategy selection is the link between the SPF Strategic Planning Step and the SPF the Implementation Step. Since the SPF requires that prevention is addressed across the life span, an understanding of human development across aids in our ability to select and implement appropriate strategies.

### **Slide 1**

*Show slide, **Human Development**.*

You might remember that one of the NIDA Prevention Principles stated that prevention programs should be developmentally appropriate and tailored to address audience characteristics, such as age. Why do you think this is a NIDA Prevention Principle? Why do we include a module of human development in the SAPST?

### **Slide 2**

*Show slide, **Using Human Development in Prevention – Why?** and review slide.*

*Refer participants to the work sheet, **Changes**, and ask them to fill it out as much as they can. Assure participants that they won't have to share any of their responses if they don't want to.*

*After a few minutes, have participants discuss the questions briefly in pairs, sharing only what they choose to share. Then ask for generalized comments from the large group.*

### **Slide 3**

*Show slide, **Changes**, and review the questions with the group.*

Debrief by suggesting the following points:

- Major changes occur throughout people's lives. Sometimes they are related to age, coinciding with developmental periods of major growth or transition.
- Changes can occur as the result of seeking fulfillment of basic human needs or for higher consciousness.
- Changes are often motivated by "disequilibrium," or a sense of instability or imbalance.
- Prevention professionals need to know what types of changes people are experiencing so they can provide developmentally appropriate services.

Social scientists have noticed the same patterns of life changes that we have just identified. There are numerous theorists that have studied human development, and we will condense some of their work and talk about emotional, social, and moral development. However, one theorist who has a somewhat different slant is Abraham Maslow.

### **Slide 4**

*Show slide, **Maslow**, and review it.*

Maslow introduced his theory of human development in the 1960's, conceiving of human needs in the form of a hierarchy, with lower needs taking priority over higher-level needs.

## Slide 5

*Show slide, Maslow's Hierarchy of Needs, and refer to information sheet of the same name.*

Maslow conceived of seven levels of human needs, from the most basic which appear at the base of the pyramid, to the higher needs which appear toward the top. He divided these seven levels of needs into two major categories: deficiency needs and growth needs. The bottom four needs on Maslow's Hierarchy are termed deficiency needs while the top three are termed growth needs. He thought that people's behavior will be motivated by their more basic deficiency needs, such as physiological, safety, and belongingness, before they could be concerned with meeting their higher growth needs. So if a person is concerned about having adequate housing, having enough to eat, or having other basic life necessities, that person will be motivated to act in ways that will help fulfill these needs and may not be very interested in higher-level needs, such as improving their mind with new knowledge, developing new life skills, or appreciating the arts. There is also a recognition that individuals do not operate on any one level all of the time, nor do they necessarily progress through all the levels in order. In a given day one might make decisions on a number of different levels.

## Slide 6

*Show slide, Maslow Deficiency and Growth Needs.*

Deficiency needs are "deficits in the organism, empty holes, so to speak, which must be filled up for health's sake and furthermore must be filled from without by human beings other than the subject" (Maslow, 1968). Deficiency needs, such as physiological needs (hunger, thirst), safety needs and needs for belongingness and self-esteem motivate behavior designed to fulfill these needs.

Growth needs, or "being needs," involve a drive toward self-actualization. They do not strive for homeostasis or tension-reduction, as lower level needs do, Instead they may cause a person to seek tension, or disequilibrium as Maslow called it, in seeking to fulfill these higher-level needs. Baumrind and Moselle (1985) described adolescence as "a process characterized by alternating periods of relative disequilibrium and equilibrium" (p. 45).

## Slide 7

*Show slide, Maslow Growth Needs.*

Self-actualizers achieve a level of success in the world beyond the satisfaction of basic physiological or emotional needs. Because their deficiency needs are largely met, they are more motivated by being needs.

Maslow talked about "peak experiences" as mystical or transcendental experiences in which the individual feels valuable, good and worthwhile, and often involves a sense of wonder, awe and unity with the universe. These experiences appear unexpectedly and can be frequent small events of awareness as well as major occasions of enlightenment.

Maslow also referred to what he called a “plateau experience,” a low-key, less intense experience offering a more enduring sense of sacredness and unity. These experiences can be earned through work, discipline, study, and commitment to spiritual practice.

*Ask participants to review their worksheet, **Changes**, and ask whether any of their life changes were motivated by seeking basic human needs or higher consciousness. Ask them how they can use knowledge about the hierarchy of human needs in their prevention work.*

## **Slide 8**

*Show slide, **Human Development- Social, Emotional, Moral.***

Researchers in the area of human development and family studies such as Oesterreich, Greenspan and Kohlberg have identified patterns of life changes related to emotional, social and moral development. In this section we will explore these patterns. At the end of the section prevention strategies that focus on emotional, social, and moral development will be identified and reviewed.

Let’s consider emotional development first. Emotional development is the manner in which human feelings or sensibilities develop. Emotions play an important role in social relationships.

## **Slide 9**

*Show slide, **Emotional Development Newborn to Age 1**, and refer participants to the information sheet, **Emotional Development Table.***

The most essential ingredient in infant care is a warm responsive and dependable adult caregiver. Caregivers should spend lots of time holding, cuddling, and playing with infants in their care. Infants who are held and cuddled develop a sense of self-worth and security. This feeling of security encourages infants to try new things.

Infants demonstrate their emotions through expressions of laughter when responding to peak-a-boo games, or when a rattle is shaken. They squeal, laugh, babble, and smile to communicate a feeling of joyfulness. They also cry with tears to communicate pain, fear, discomfort, or loneliness. For example, infants demonstrate fear of falling off of high places such as tables or stairs, fear of strangers, and demonstrate anger if a toy is taken away.

From birth to three months infants learn to self-regulate. With the help of their parents they learn to communicate when they have had too little, too much, or just the right amount of stimulation. Emotional self-regulation improves as crawling and walking permit approach and retreat from stimulation.

Infants are able to reliably identify their caregiver’s emotions from facial expressions, body language, voice quality, and touch. They also develop sensitivity to the positive and negative feelings of their caretakers.

Infants begin to learn about cause and effect: their smile will produce a smile in her caregiver, and their “goohs” and “gahs” will produce caregiver “oohs” and “aahs.”

## **Slide 10**

*Show the slide, Emotional Development 1 to 2 Years of Age.*

Emotions take on roller coaster-like qualities as toddlers at this age can move from excitement to anger to laughter within a few moments. At this age they can be extremely demanding and persistent. Temper tantrums may be utilized if their demands are not met. These tantrums are a result of the toddlers' inability to express their ideas. Handling tantrums calmly will help deescalate them.

Toddlers become possessive of caregivers' attention and display feelings of jealousy. They display their affection by returning a hug or a kiss. Toddlers are surer of themselves and of what they can do as they grow. As they acquire language they are able to verbally express their emotions through ideas created in their imagination. For example, they might punish a doll or stuffed toy for being naughty or say, "No more cookies."

## **Slide 11**

*Show the slide, Emotional Development 3 to 6 Years of Age.*

Children at this age move from expressing feelings of anger physically to verbally. Furthermore, language at this stage may range from silly words to profanity and loud, boisterous laughter may accompany such language.

At the onset of this age group, wild stories and exaggeration become common. Children enjoy making others laugh and being silly. They have a good sense of humor and enjoy sharing jokes and laughter with adults. At the latter part of this age group, children may comply with rules displaying a positive emotion they truly do not feel.

Children at this age also become more sensitive to the needs and feelings of others around them. They take notice when another child is angry or sad and therefore are more sensitive to feelings of others. They are also less fearful of the world than toddlers because they have a better understanding of the world. For example, the emotional elements of their pretend play become more complex and true to real-life situations. They learn to separate make-believe from reality.

## **Slide 12**

*Show the slide, Emotional Development 7 to 9 Years of Age*

A strong desire to perform well and do things right is evident among this age group of children. They view things as black and white, right or wrong, wonderful or terrible, with very little middle ground. They find criticism or failure emotionally difficult to handle. Outbursts of anger are less frequent as they are better able to conform to rules.

Children become aware of others' expressions and emotions and can begin to see things from another child's point of view. Their ability to empathize with others increases as they are better able to understand emotions. They seek a sense of emotional security by participating in groups, organized play, and clubs.

## **Slide 13**

*Show the slide, Emotional Development 10 to 14 Years of Age.*

Early adolescents experience fluctuations in mood, partly as a result of hormonal changes. Rising hormone levels influence emotions in two ways. First they have an organizing and activating influence on emotions, facilitating negative emotions such as anger and inhibiting positive emotions such as happiness. For example, they hide joy about a good grade in order to appear “cool” to their peers. Second, rapid increases in hormones may influence emotions during adolescence by disrupting the existing hormonal balance.

A drop in self-worth may occur at the time that adolescents move from elementary to junior high school. The physiological changes of puberty may be a factor; self-perception depends on beliefs about appearance and popularity, and boys and girls alike tend to think of themselves as being less attractive once they reach adolescence. This obsession with physical appearance and extreme emotional sensitivity to embarrassment leads some adolescents to respond in a violent manner. Others may internalize these stresses and experience depression and anxiety.

At this early stage adolescents often think their own feelings are unique – that those around them have never experienced such emotions. Hence, they insist that no one else, least of all their parents, knows how they feel. Furthermore, they may feel invulnerable and immortal. As a result, adolescents are prone to engaging in risky behaviors, such as driving at high speeds, or experimenting with drugs.

#### **Slide 14**

*Show the slide, Emotional Development 14 to 18 Years of Age.*

Adolescents who have strong emotional bonds with parents tend to have a higher sense of self-worth and function at more mature levels in this later stage of adolescence. Those who are alienated from their parents are susceptible to the opinions of others for longer periods of time.

At this stage adolescents also wrestle with the question of who they are and how they fit into the adult world. Initially they have mixed ideas and feelings about the specific ways in which they will fit into society. They may experience a variety of things such as tinkering with cars, babysitting for neighbors, engaging in extracurricular activities at school and affiliating with political groups. As adolescents mature they achieve a sense of identity regarding who they are and where their lives are headed. When maturity is reached a lot of self-reflection takes place in order to understand one’s feelings.

Remember that individuals do not necessarily operate on any one level all of time, regardless of their chronological age. The stage at which they operate most of the time is, however, significant, in that it represents their general developmental level.

*Ask participants to share in pairs or quads at least three ways they think knowledge about emotional development should inform and shape their work in prevention.*

#### **Slide 15**

- *NOTE: An alternative method of presenting this material on social development (slides 15-20) is as follows:*
  - *break the class into five groups;*
  - *assign one state of social development to each group;*
  - *refer participants to the information sheet, **Social Development Table**;*
  - *have each group develop a one-minute role play depicting the aspects of social development in their assigned stage;*
  - *have each group present their role play while displaying the corresponding stage slide.*

*Show the slide, **Social Development 1 to 2 years of Age**, and refer participants to the information sheet, **Social Development Table**.*

Social Development refers to the manner in which humans develop interactions with others in order to become social participants in their communities.

Children at this age love to be touched and held close, and love the attention given to them by adults. They spend a great deal of time watching, observing, and imitating adults. For example, they imitate adult actions such as drinking from a cup or talking on the telephone.

Children develop self-recognition through their awareness of adult standards (a child asks their parent to fix a broken toy by expressing concern and a need for help), their tendencies to smile following accomplishments (children demonstrate satisfaction in purposefully initiating challenging activities or behaviors for themselves), when giving directions to adults (this implies the child is now a person living among other people even if he still lacks many of the skills he sees in older children or adults), and when able to speak self-descriptively (Me go).

At this age children are able to categorize people around them according to each person's specific characteristics. Children have the ability to familiarize themselves with each of the people and develop a set of ideas about each person based on their experiences, which helps the child recognize that person by name.

Children are naturally self-centered. They are very possessive of belongings. For example, they can offer toys to other children but then will want them back.

A greater sense of independence from their caregiver develops as children begin to walk, run, and climb with greater skill. They begin using language such as "No" and "Mine." They begin to show interest in dressing, brushing their hair and teeth. Social interests and physical abilities sometimes collide as a hug becomes a tackle and a gentle pat becomes a whack.

### **Slide 16-17**

*Show the slide, **Social Development 3 to 6 Years of Age**.*

Children at this age begin to remember their life history. They are now able to express their beliefs through their desires. They like to feel grown up and often boast about themselves to younger children. They enjoy helping adults with simple household tasks and are able to

understand and obey simple rules and often ask permission. At times they do need to get away from their caregivers and be alone.

Children now act with an intention in mind. Their perception of others is based on the concrete characteristics as well as common emotions and attitudes. With this perception they tend to imitate parents of the same sex, particularly in play, but often show preference for the parent of the opposite sex. At this age, children become critical of other children and can be embarrassed by their own mistakes. At the latter part of this stage children enjoy dramatic play with other children and “best friends” become very important. They constantly seek attention and the approval of adults.

Children develop the ability to understand relationships among people and similarities and differences in other families. Friendship is based on play and exchange of material goods. Children acquire social problem solving strategies such as taking turns, and sharing.

### **Slide 18**

*Show the slide, Social Development 6 to 9 Years of Age.*

Children develop a self-concept based on their academic, physical, and social dimensions. They base achievement on their ability and effort as well as on external factors such as praise from their caregivers.

This age group is able to develop perceptions of people according to personality traits and through comparisons. They develop racial and social class attitudes. They are also able to understand that people can interpret the same event in different ways. They become fascinated by rules and can develop games with extensive rules and rituals. They may have a best friend, as well as an enemy. Generally they enjoy caring for and playing with younger children.

Being with friends becomes increasingly important for children. Girls want to play more with girls and boys with boys. Social problem-solving strategies increase in quantity and quality.

### **Slide 19**

*Show the slide, Social Development 10 to 14 Years of Age.*

Adolescents at this stage become increasingly attuned to and interested in the mental life of those around them. They gradually learn that people have thoughts, feelings, and motives different from their own and that these thoughts, feelings, and motives can be complex and at times contradictory.

They become increasingly skilled in taking the perspectives of those around them: They can imagine how other people must think and feel and begin to empathize with those who are suffering or in need. With this empathy they develop an interest in pleasing others. They also have a tendency to think of social rules and conventions as standards that should be followed for their own sake.

Early adolescents store information about social events in working memory, expanding on such events using one's existing knowledge base and retrieving possible responses from long-term memory.

Secret codes, shared word meanings and made up languages, passwords and elaborate rituals are important ways to strengthen the bonds of friendship.

## **Slide 20**

*Show the slide, **Social Development 15 to 18 Years of Age.***

Adolescents at this stage recognize that people are products of their environment and that past events and present circumstances influence personality and behavior.

During late adolescence young people's conceptions of their society reflect a similar progression toward more complex, comprehensive, and abstract views. Adolescents gain greater awareness of social conventions as a means of helping their society function smoothly and cohesively. They become increasingly knowledgeable about their society's political and economic foundations. They gain a concern about doing one's duty and abiding by societal rules as a whole rather than simply pleasing certain people. Nonproductive ways of thinking about others, such as stereotypes and prejudice, sometimes accompany such advancement.

An identity is developed based on personality traits, close friendships, romantic appeal and job competence. Character sketches are used to formulate person perception. For example, adolescents who are deemed socially popular among their peers are perceived as liking other people; they are tolerant, flexible, and sympathetic and help others by making them feel accepted and involved by planning and initiating interesting and enjoyable group activities. Popular teenagers are described as lively, cheerful, and good-natured, and as having a good sense of humor; they possess initiative, enthusiasm, drive, and good ideas (Conger, 1977).

Adolescents who are ill at ease and lack in self-confidence and who respond to uncomfortable situations by acting timid, nervous, or withdrawn are more likely to be neglected and socially isolated from their peers. Also, teens that handle their discomfort in an aggressive, conceited, or demanding way are apt to be actively disliked and rejected (Conger, 1977).

Again, remember that individuals do not necessarily operate on any one level all of time, regardless of their chronological age. The stage at which they operate most of the time is, however, significant, in that it represents their general developmental level.

*Ask participants to share in pairs or quads at least three ways they think knowledge about social development should inform and shape their work in prevention.*

## **Slide 21**

*Show slide, **Moral Development Level One.***

Moral development is the manner in which a sense of what is right and what is wrong develops. Moral development occurs at several broad levels, roughly corresponding to developmental ages. Level one moral development occurs from birth to about age 6. *Review slide.*

#### **Slide 22**

*Show the slide. Moral Development Newborn to 3 Years of Age, and refer participants to the information sheet, Moral Development Table.*

Children think about morality in concrete and selfish terms. A child makes no distinction between what he believes is right and what the world tells him is right.

By the end of this stage children begin to conform to their caregivers' wishes and postpone their own desires.

#### **Slide 23**

*Show the slide, Moral Development 3 to 6 Years of Age.*

Children at this stage accept the moral perspectives of caregivers as their own. Children begin to feel remorseful for wrong behavior and are now able to understand standards for what is considered right and for what is considered wrong.

Children form opinions about their caregiver's authority and determine what they are able to do and not do. Determining the reasoning for what is right or wrong is self-serving. By six years of age, children base justice on what they consider to be equal.

Children do not have to receive immediate gratification for their wants and desires and are better able to wait for things. Adults need to provide children with strategies for self-control.

#### **Slide 24**

*Show the slide Moral Development Level Two.*

Level two moral development occurs from about age 7 to age 18. *Review slide.*

#### **Slide 25**

*Show the slide, Moral Development 7 to 9 Years of Age.*

Children focus on rewards and punishments provided by the authority figures to determine what is right and what is wrong. Children reason about justice based on what they consider to be fair. Good is whatever brings approval from friends as a peer group

Children expand their self-control strategies and gain an understanding of how these strategies work.

#### **Slide 26**

*Show the slide, Moral Development 10 Years to 14 Years of Age.*

Early adolescents gain an increased understanding of fairness and an increased capacity to feel guilt and shame about moral wrongdoing. They begin to recognize that others have needs. They may try to satisfy others' needs if their own needs are also met. ("You scratch my back, and I'll scratch yours.") They continue to define right and wrong primarily in terms of consequences to themselves.

At this stage, adolescents make decisions based on actions that will please others especially authority figures. They are concerned about maintaining interpersonal relationships through sharing, trust, and loyalty, and they take other peoples perspectives and intentions into account in their decision-making.

### **Slide 27**

*Show the slide, Moral Development 15 to 18 Years of Age.*

Late adolescents look to society as a whole for guidelines concerning what is right and wrong. They know that rules are necessary for keeping society running smoothly and believe it is their "duty" to obey them. However, they perceive rules to be inflexible; they don't necessarily recognize that as society's needs change, rules should change as well.

Good is whatever conforms to existing procedures for settling disagreements in society. For example, in the United States legal disagreements are settled in court whereas in other societies legal disagreements may be settled through physical aggression. Also, good is whatever is consistent with personal, general moral principles. Moral dilemmas are based on relationships with others and on societal norms. Moral reasoning focuses on understanding others feelings. Self-regulation is based on what is considered right and wrong.

For some young people high moral values are a central part of their overall identity; these individuals often show a strong commitment to helping those less fortunate than themselves. Adolescents with less advanced moral reasoning, especially those who focus on their own needs exclusively, are more likely to engage in antisocial behavior.

### **Slide 28**

*Show slide, Moral Development Level Three, and review slide.*

In adulthood, morality becomes increasingly internalized, and choices are made from within oneself. Moral thinking is in terms of internal principles and values that one has determined to be universally life enhancing. These values consistently guide behavior. Authority and rules are respected, but there is also the recognition that circumstances occur in which societal standards cannot govern behavior (situational morality). Moral behavior is that which is consistent with one's values. Personal beliefs guide personal behavior, one "walks the talk," and there is a recognition that to do so may involve personal sacrifice and social disapproval.

### **Slide 29**

*Show slide, Moral Development Proceeds From...*

Social, emotional, and moral development, of course, continue throughout adulthood. Ideally, adulthood brings a more mature sense of self and others, a balance between individual-

consciousness, collective-consciousness, and societal-consciousness. However, remember that individuals do not necessarily operate on any one level all of time, regardless of their chronological age. In a given day one might make decisions on a number of levels, while at the same time operate generally from one “preferred” level which indicates their general stage of moral development. Often the elder years bring realization of perspective to one’s life as elders reflect on life’s meaning. Elders also bring resiliency skills learned earlier in life, or the lack thereof, to the task of preparing for and experiencing late life losses often characterized by reductions in social, health, and economic status (Erikson, 1950). In addition, brain changes associated with aging may also cause emotional states resembling adolescence, bringing increased challenges to the already challenging tasks of aging.

### Slide 30

*Show slide 29, **Moral Development Stage Scenarios**.*

*Ask participants to refer to their information sheet, **Moral Development Table** and, at their tables, identify which stage of moral development the scenarios depicted on the slide reflect. Allow 10 minutes and debrief.*

*Then, in pairs, ask participants to list at least three ways information about moral development should inform and shape their work in prevention. Debrief by asking several pairs to report out.*

### Slide 31

*Show slide, **Developmentally Appropriate Prevention**, and review slide.*

### Slide 32

*Divide participants into their case study groups. Show slide, **Activity**, and review the instructions.*

*Refer participants to the information sheet, **Prevention Strategies focused on Human Emotional, Social, and Moral Development**, as a resource for this activity.*

*Give participants 20 minutes to complete the activity, after which they will be asked to share their ideas. Debrief by asking for any significant insights gleaned from the activity.*

### Slide 33

*Show slide, **Adolescent Brain**, and refer participants to the information sheet, **Adolescent Brain Development**.*

We see dramatic changes occurring physically with adolescents. These changes are occurring equally dramatically on the inside.

Until recently, the adolescent brain was believed to be the same as that of an adult – a finished product. In part, that was due to the fact that the physical size of the adolescent brain is the same as that of an adult. Hence, scientists believed the adolescent brain was fully developed. This is not the case.

### Slide 34

*Show slide, Use It or Lose It.*

The brain is like a muscle that needs to be exercised to fully develop. Scientists like to use the phrase “neurons that fire together wire together.” The more that certain neurons are used, the stronger their pathways become. For example, in teaching adolescents to manage strong emotional impulses, the more we teach them to think before they speak or act, the stronger these neurons become.

### **Slide 35**

*Show slide, Blossoming and Pruning.*

What a time for this pruning process to take place! The prefrontal cortex is responsible for planning, considering consequences, and impulse control. The prefrontal cortex is the part of the brain that tells you not to make a nasty gesture when someone cuts you off on the freeway, as it could result in dire consequences.

The fact that this part of the brain is not fully wired results in increased risk-taking, distractibility, and conflict-seeking on the part of adolescents. The prefrontal cortex is not fully developed until the early twenties.

Adolescents need increased sleep during this period. Some say 9-10 hours are required. However, their rhythm is such that they do not feel sleepy until late at night, and they like to sleep late. This, too, is a result of brain activity. Their melatonin level rises during the day, and they're not sleepy until much later than younger children and adults. But they need that rest to help their nerve cells recover.

### **Slide 36**

*Show slide, Hormonal Surges, and review slide.*

### **Slide 37**

*Show slide, Neurotransmitters.*

Besides affecting the body's organs, hormones affect the brain's neurotransmitters. In the adolescent brain, the three most active (and therefore most affected) are norepinephrine, dopamine, and serotonin. All three of these neurotransmitters influence mood, which explains a lot about adolescent mood changes.

### **Slide 38**

*Show slide, Neurotransmitters (continued).*

Norepinephrine has the effect of an energizer. It prepares the body for a fight or flight response if needed.

Dopamine releases that “feel good” feeling. Humans are naturally attracted to anything that increases dopamine levels. Two prime examples are alcohol and drugs.

Serotonin is a mood stabilizer. In proper amounts, we feel relaxed. If there is too little serotonin in our systems, we feel depressed or aggressive.

Chocolate increases levels of dopamine and serotonin, which may explain why some of us crave it.

#### **Slide 39**

*Show slide, **Alcohol and the Adolescent Brain**, and review slide.*

#### **Slides 40-41**

*Show slides, **Tobacco and the Adolescent Brain**, and review slides.*

#### **Slide 42**

*Show slide, **Other Drugs**, and review slide.*

#### **Slide 43**

*Show slide, **ATOD Interferes with Growth**, and review slide.*

#### **Slide 44**

*Show slide, **In Conclusion**, and review slide.*

*Have participants discuss, at their tables, how they can use information on adolescent brain development in their prevention work. Have a few tables report their ideas to the large group.*

***The next section is an optional section presenting the Medicine Wheel concept of Human Development and may be used with appropriate audiences.***

#### **Slide 45**

*If you chose to present the Medicine Wheel, know that some Native Americans have indicated that it is inappropriate for a non-Native American to present the Medicine Wheel. Many facilitators have privately invited Native American participants or presenters to review the Medicine Wheel model of human development earlier in the week, have asked for their recommendations about sharing the model during the training, and have followed their recommendations.*

*Show slide, **Medicine Wheel**, and refer participants to the information sheet of the same name.*

Many academic models of human development are linear, including those covered in this module. In contrast, the Native American concept of the Medicine Wheel symbolically demonstrates a nonlinear model of human development that can be useful when incorporated into prevention practices. The model varies somewhat between groups, but the concept is similar. Each direction on the wheel offers lessons and gifts that help to develop an individual. Typically, animals, plants, herbs and minerals are used to demonstrate developmental lessons in a tradition of storytelling. The idea is to remain balanced at the center of the wheel while equally developing the physical, mental, emotional and spiritual aspects of one's person continuously throughout the life cycle. Imbalance in any of the four aspects of one's being causes disease in

that element and may result in physical disease, mental illness, emotional disease, or spiritual disease.

In this cyclical model, movement around the wheel can symbolically represent the sun's path across the sky, the seasons, and the life cycle. The journey begins in the East (place of first light, spring and birth), moving South (place of summer and childhood), traveling to the West (place of autumn and adulthood) proceeding to the North (place of winter and elders), returning to the East in a continuous cycle.

*Review lessons and gifts of each compass direction, using the information sheet as a guide.*

*Ask participants what similarities they see with the Medicine Wheel and the linear models of human development discussed in this section and ideas for how they might use the medicine wheel concept of human development in their prevention work.*

#### **Slide 46**

*Show slide, **Questions and Discussion**, and invite questions and closing discussion.*

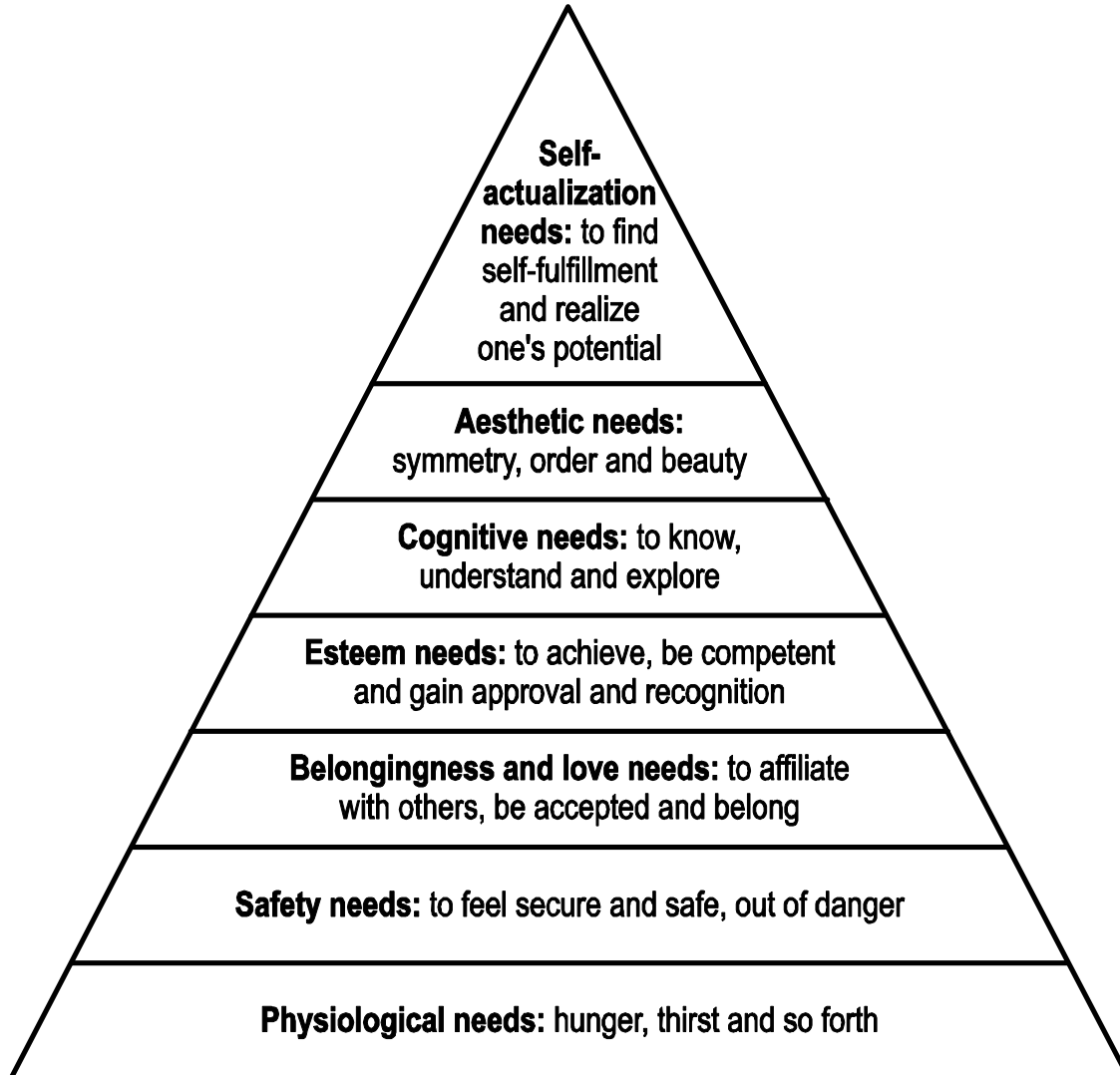
## WORKSHEET

### Changes

Identify one change you've gone through in each of the following categories and write down how old you were when the change occurred.

1. Physical change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
2. Family change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
3. Intellectual change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
4. Emotional change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
5. Social change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
6. Moral change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
7. Financial change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
8. Career change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
9. Philosophical change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_
10. Political change: \_\_\_\_\_  
How old were you? \_\_\_\_\_  
How did you feel when this happened? \_\_\_\_\_

## Maslow Hierarchy of Needs



## Information Sheet

### Emotional Development Table

Newborn to Age 1	1 to 2 Years of Age	3 to 6 Years of Age	7 to 9 Years of Age	10 to 14 Years of Age	15 to 18 Years of Age
<p>Infants need a warm, responsible caregiver. Infants develop self-worth and security. Emotional security regulation improves. Infants identify caregivers and emotions. Infants begin to learn about cause and effect.</p>	<p>Emotions take on roller-coaster quality. Children become extremely demanding and persistent. Temper tantrums are common. Children become possessive of caregivers. Empathy begins to appear.</p>	<p>Children move from physical emotional expressions to verbal expressions. They develop a good sense of humor. They comply with rules and display positive emotion as they do so. They are sensitive to others' feelings. Emotional elements of play become true to real-life situations.</p>	<p>Children desire to perform well and do things correctly. They view issues as right or wrong, with very little middle ground. Criticism and failure are difficult to handle. Emotional conformity to rules improves. They become better able to understand others' emotions. They seek emotional security.</p>	<p>Frequent changes in mood result from hormonal changes. Children carefully regulate their emotions. They may experience a drop in self-assurance after transition to middle school. They are preoccupied with appearance. Serious emotional problems such as depression may appear. They internalize or externalize stresses.</p>	<p>Decrease in self-consciousness becomes evident in early adolescence. Young people wrestle emotionally with identity issues. (Who am I?) They may accept some parental ideologies and professional goals. They search and explore to develop their own identity. Maturity may bring about appropriate emotional behaviors.</p>

Oesterreich, L. (1995). Ages and stages. In L. Oesterreich, B. Holt, & S. Karas, *Iowa family child care handbook* [Pm 1541] (pp. 196–197). Ames, IA: Iowa State University Extension.

## Information Sheet

### Social Development Table

Newborn to 2 Years of Age	3 to 6 Years of Age	7 to 9 Years of Age	10 to 14 Years of Age	15 to 18 Years of Age
<p>Children watch, observe, and imitate adults.</p> <p>They develop self-recognition.</p> <p>They categorize people according to characteristics.</p> <p>They are self-centered.</p> <p>They develop a greater sense of independence.</p>	<p>Children begin to remember life history.</p> <p>They express beliefs through desires.</p> <p>Their self-efficacy is typically high.</p> <p>Attributions are related to achievement. <b>[Ed. Note: This is unclear. Rerword somehow?]</b></p> <p>They act with intention.</p> <p>They are critical of others.</p> <p>They seek attention and approval of adults.</p> <p>Friendship is based on play and exchange of material goods.</p> <p>They acquire social problem-solving strategies.</p>	<p>Self-concept is based on academic, physical, and social dimensions.</p> <p>Achievement is based on ability, effort, and on external factors such as praise.</p> <p>Children develop perception of others based on personality traits and comparisons.</p> <p>They develop race and social class attitudes.</p> <p>Their perspective expands.</p> <p>Friendship becomes increasingly important.</p>	<p>Children show interest in others' mental states and feelings.</p> <p>They take others' perspectives into consideration.</p> <p>They show some tendency to think of social rules and conventions as standards that should be followed.</p> <p>They want to please others.</p> <p>They store information about social events in long-term memory.</p> <p>Secret codes and shared word meanings strengthen the bonds of friendship.</p>	<p>Young people recognize that people have different thoughts and feelings from their own.</p> <p>They show an understanding that social rules and conventions help society run more smoothly.</p> <p>Self-concept is based on personality traits, friendships, romantic appeal, and job confidence.</p> <p>Character sketches formulate perceptions.</p> <p>They define friendship as mutual understanding and intimacy rather than shared activities.</p>

Oesterreich, L. (1995). Ages and stages. In L. Oesterreich, B. Holt, & S. Karas, *Iowa family child care handbook* [Pm 1541] (pp. 196–197). Ames, IA: Iowa State University Extension.

## Information Sheet

### Moral Development Table

Newborn to 2 Years of Age	3 to 6 Years of Age	7 to 9 Years of Age	10 to 14 Years of Age	15 to 18 Years of Age
<p>Children think of morality in concrete terms and are motivated selfishly.</p> <p>They learn to comply with rules and to accept delay of gratification.</p>	<p>Children accept moral perspectives of caregivers as their own.</p> <p>They understand standards for right and wrong.</p> <p>They form opinions about caregivers' authority.</p> <p>Their notion of justice is based on equality.</p> <p>Ability to accept delay of gratification improves.</p> <p>They need adults to provide self-control strategies.</p>	<p>“Good” is whatever conforms to existing laws, customs, and authority.</p> <p>Rewards and punishment provide the focus for what is right and wrong.</p> <p>Their sense of justice is based on fairness.</p> <p>“Good” is also what brings approval from friends.</p> <p>They expand their self-control strategies.</p>	<p>Children develop better understanding of fairness and guilt.</p> <p>They recognize others' needs.</p> <p>They are concerned about maintaining interpersonal relationships.</p> <p>They consider other people's perspectives when making decisions.</p> <p>They satisfy others' needs if their own needs are also met.</p> <p>Decisions are intended to please others.</p>	<p>Young people look to society as a whole for guidelines about right and wrong.</p> <p>“Good” is whatever conforms to existing procedures.</p> <p>“Good” is consistent with moral principles.</p> <p>Moral dilemmas involve relationships with others and societal norms.</p> <p>Moral reasoning focuses on understanding others' feelings.</p> <p>Self-regulation is based on what is considered right and wrong.</p>

Oesterreich, L. (1995). Ages and stages. In L. Oesterreich, B. Holt, & S. Karas, *Iowa family child care handbook* [Pm 1541] (pp. 196–197). Ames, IA: Iowa State University Extension.

## Information Sheet

### Prevention Strategies Focused on Human Emotional, Social, and Moral Development

EMOTIONAL	SOCIAL	MORAL
Teach families to have clear expectations for behavior, to monitor their children, and to implement appropriate consequences.	Teach life and social skills, such as communication, goal setting, problem- solving techniques, stress management, refusal skills, and decision-making skills.	Teach the principles of right and wrong by providing opportunities for children to engage in discussions that question and examine moral issues.
Provide training for families on managing stress and anxiety.	Build bonding through opportunities, skills, and recognition within the family, school, and community.	Provide self-management skills for self-control, such as deep breathing, mental rehearsal, muscle relaxation, goal setting, and planning for the future.
Teach parents how to reinforce appropriate behavior.	Provide parental training on involvement in activities with their children; provide knowledge about the school system and encourage parents to become involved in their children’s school; provide training in conducting family meetings and planning family activities.	Teach decision making based on intrinsic motivation rather than external punishments or consequences.
Teach assertive communication, which allows expression of one’s feelings, needs, and desires.	Foster a commitment to school in young people.	Teach parents, schools, and communities to provide clear and consistent no-use messages.
Teach emotional management strategies for dealing with stressful situations.	Work with schools to foster a climate of home-school collaboration, clarification of rules and enforcement, improved classroom management and organization, and positive reinforcement.	Teach parents and schools disciplinary techniques based on logical consequences.
Increase bonding to persons with healthy beliefs and clear standards by teaching families, schools, and communities how to provide opportunities, skills, and recognition to young people.	Teach that using alcohol, tobacco, and other drugs is not the norm, even if the belief is that “everyone is doing it.”	Provide opportunities for young people to participate in the governing process of the family and school. This allows young people to develop concepts of justice and self-discipline out of their own experiences instead of authoritatively.

U.S. Department of Justice (2000). *Promising strategies to reduce substance abuse*. Washington DC: Office of Justice Programs.

### Adolescent Brain Development

#### Brain Development Is Structural and Functional

- Brains undergo “pruning.” This refers to the natural removal of brain cells. Pruning occurs during the last months before birth; the final pruning occurs in the late teens.
- When children are between 6 and 12 years of age, their neurons (the basic functional units of the nervous system) grow bushier, making connections to other neurons and creating pathways for nerve signals.
- The thickening of the brain’s gray matter, which includes neurons and dendrites (the branched parts of nerve cells that transmit impulses toward the cell body), peaks for girls at age 11 and for boys at age 12.5
- Pruning thins out gray matter and tapers off by age 20.
- As gray matter thins, brain white matter thickens. White matter is responsible for making nerve signal transmissions faster and more efficient.
- During adolescence, the number of brain connections decrease, but the remaining connections become faster.
- Brain development proceeds in stages, generally from back to front.
- Regions in the back of the brain that control sensory functions reach maturity the earliest.
- The prefrontal cortex, known as the “brain’s police officer,” is associated with impulse control, consequences, context, and judgment.
- Of the parts of the brain, the prefrontal cortex matures last.

#### Brain Development Is Hormonal

- Adolescents come under hormonal assault during puberty.
- Estrogen and testosterone hormones in the bloodstream spur the development of the reproductive system.
- Adrenal sex hormones are extremely active in the brain and directly influence neurochemicals that regulate mood and excitability.
- Adolescents seek out situations in which they allow emotions to run wild.
- A hormone-brain relationship contributes to the appetite for thrills, strong sensations, and excitement.
- The brain regions that curb risky impulsive behavior are under construction during adolescence.
- The parts of the brain responsible for sensation seeking are turned on during adolescence.

#### Brain Development Is Biochemical

- Dopamine is a chemical involved in the pleasure-and-reward circuit in the brain.
- All the addictive drugs increase dopamine in the reward centers in the inner brain by

increasing dopamine release into synapses (the point of connection between two nerve cells) or prolonging its stay.

- High levels of brain dopamine may influence a young person to take a drug or drive a car too fast. And these actions can further increase levels of dopamine.
- Higher sensitivity to reward and excessive risk taking are clearly related to dopamine. Low-risk-takers can become high-risk-takers under the influence of alcohol, which increases dopamine levels.
  - Some people may be born with dopamine systems that are either overly sensitive or under sensitive, leaving them primed to seek or avoid risky activities.
  - One study found that the highest risk takers were 10 times more likely to take drugs, which has become one of the most common forms of risk taking in teenagers.
- Magnetic resonance imaging (MRI) scans have shown that increased dopamine levels cause emotions to be processed in the amygdala, an area involved in instinctual reactions such as fight or flight, anger, or “I hate you,” rather than in the frontal cortex, which is involved in logical thinking. This explains why teenagers sometimes seem emotionally overactive.
- Lower levels of serotonin, the neurotransmitter that has a calming effect, contribute to impulsivity and aggression. Serotonin affects mood, pain, and hunger.
- Lower levels of serotonin have been associated with adolescent depression.

## Research Findings on the Effects of Alcohol and Other Drugs on the Adolescent Brain

- Adolescent brains are growing dramatically and are quite sensitive to neurotoxins like alcohol.
- Alcohol causes damage to the hippocampus, which is related to memory.
- Damage to the adolescent brain caused by nicotine is similar to the damage caused by alcohol.
  - Teenagers who are heavy tobacco users have a much greater risk of developing panic attacks later in life. One study showed that teenagers who used tobacco heavily were 15 times more likely to develop panic attacks than their nonsmoking peers.
  - Adolescent nicotine users are prone to infections, depression, and anxiety, with girls being more sensitive than boys.
- Ecstasy causes severe damage to brain cells that produce dopamine and serotonin.

## Teens and Brain Development

- Mature thinking occurs between grades 8 and 11 for girls and between grade 8 and the ages of 18 and 24 for boys.
- Adolescent lying can be seen as a natural phenomenon of the development of the brain’s frontal lobe, which is involved in problem solving and future-oriented thinking. Frontal

lobe development allows teens to integrate social, emotional, and intellectual ramifications in order to see them in context. This is the beginning of moral development.

- Teens need people and institutions to keep them safe, help them interpret emotions, identify options, predict consequences, and make reasoned decisions, especially until they are about 16 or 17 years of age.
- Teens have an increased need for sleep and naturally stay up later and sleep later; increased sleep is necessary for their wildly developing brains.
- Parents (and other adults) contribute to the problem of teen alcohol use by not sending clear messages that drinking is not a rite of passage and by not effectively monitoring their teenagers.
- Physical education, music, the arts, and sports are important to adolescent development.

### Emotional and Cognitive Maturity

- Emotional and cognitive maturity can be defined by considering a person's thinking and behavior in the following three areas:
  - Responsibility—the degree to which people feel they can depend on themselves, be self-reliant, and resist peers.
  - Perspective—the ability to think about consequences of actions ahead of time, as well as the possible impact of actions on others.
  - Temperance—a measure of impulsivity and the ability to regulate emotions.

### Conclusions and Implications

- A stable home and community help adolescents with the stress of being a young person today. A structured environment creates a sense of security.
- It may be time to give teenagers a wider definition of what success at this age means, to give them more “wiggle room” to make their own mistakes and come up with their own answers. They need some space to find their own path. They need time to take risks and roam intellectually, physically, and emotionally.
- The availability of a great variety of internships, work experience, and job training, as well as opportunities to travel, is important to young people.
- Finally, teens need a lot of **patience** and **love** as they move from adolescence into adulthood.

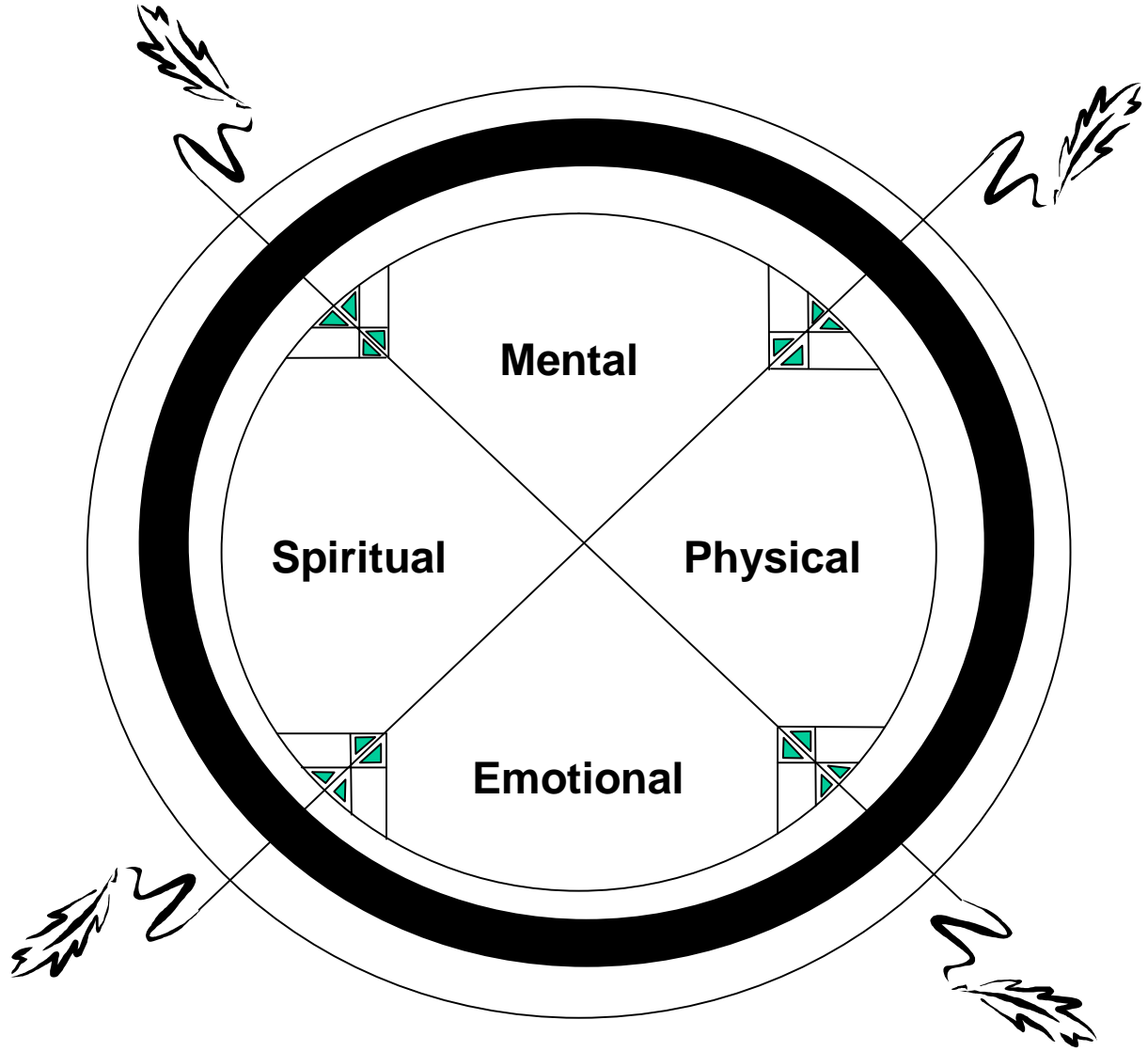
## **Bibliography:**

Strauch, B. (2003). *The primal teen*. New York: Doubleday.

Wallis, C. (2004, May 10) What Makes Teens Tick. Time Magazine:163, 56-65.



The Medicine Wheel



## The Medicine Wheel - continued

The Native-American concept of the medicine wheel symbolically represents a nonlinear model of human development. Each compass direction on the wheel offers lessons and gifts that support the development of a balanced individual. The idea is to remain balanced at the center of the wheel while developing equally the physical, mental, emotional, and spiritual aspects of one's personality. The concept of the medicine wheel varies among Native peoples: different groups attribute different gifts to positions on the wheel. But the following offers a generalized overview of some lessons and gifts connected with the developmental process.

Lessons and gifts from the East, the place of first light, spring, and birth, include

- Warmth of spirit
- Purity, trust, and hope
- Unconditional love
- Courage
- Truthfulness
- Guidance and leadership
- Capacity to remain in the present moment

Lessons and gifts from the South, the place of summer and youth, include

- Generosity, sensitivity, and loyalty
- Romantic love
- Testing of the physical body/self-control
- Gifts of music and art
- Capacity to express feelings openly in ways respectful to others

Lessons and gifts from the West, the place of autumn and adulthood, include

- Dreams, prayer, and meditation
- Perseverance when challenged
- Balance between passionate loyalty and spiritual insight
- Use of personal, sacred objects
- Understanding of life's meaning
- Fasting, ceremony, self-knowledge, and vision

Lessons and gifts from the North, the place of winter and elders, include

- Intellectual wisdom
- Ability to complete tasks that began as a vision
- Detachment from hate, jealousy, desire, anger, and fear
- Ability to see the past, present, and future as interrelated

### Source

Bopp, J., Bopp, M., Brown, L., & Lane Jr., P. (1989). *The sacred tree: Reflections on Native American spirituality*. Twin Lakes, WI: Lotus Light Publications.