Chapter 2:
The Well-Being of the Paramedic

Wellness Components

- Physical well-being
- Mental and emotional health

Physical Well-Being

- Several factors play a major role in maintaining physical health
  - Good nutrition
  - Physical fitness
  - Adequate sleep
  - Prevention of disease and injury
## Nutrition

- **Nutrients**
  - Foods that contain elements necessary for body function
- **Six categories**
  - Carbohydrates
  - Fats
  - Proteins
  - Vitamins
  - Minerals
  - Water

## Carbohydrates

- Composed of carbon, hydrogen, and oxygen
- Primarily are obtained from plant foods
- Lactose (milk sugar) only important source of animal carbohydrate
- Plants store carbohydrates as starch

## Fats & Fatty Acids

- Fats in food are mixtures of three types of fatty acids
  - Saturated
  - Polyunsaturated
  - Monounsaturated
- Differ in chemical makeup and in the types of foods in which they appear
**Fats & Fatty Acids**
- Saturated fats
- Polyunsaturated fats
- Monounsaturated fats

**Cholesterol**
- Present in all foods of animal origin
- Heavily concentrated in fat and in poultry skin
- White, waxy substance found in every cell
- Needed by the body for normal functioning
- Manufactured in liver and is carried through bloodstream
- High blood cholesterol levels increase risk of heart disease and stroke

**Proteins**
- Composed of hydrogen, oxygen, carbon, and nitrogen
  - Most also contain sulfur and phosphorus
  - Essential to building body tissue during growth, maintenance, and repair
  - When digested, break down into amino acids
    - Classified as either essential or nonessential
Amino Acids

- Essential amino acids
  - Absolutely necessary for body growth and cellular life
  - Must be obtained in food since they are not produced in body
- Nonessential amino acids not absolutely necessary for body health and growth
  - Can be manufactured in the body

Proteins/Amino Acids

- Proteins that contain all essential amino acids are complete proteins
  - Meats and dairy products
- Proteins that are missing one or more essential amino acids are incomplete proteins
  - Grains and vegetables
- Proteins can be used as a source of energy

Vitamins

- Organic substances present in minute amounts in foods
- Must be obtained in food or through vitamin supplements because:
  - Essential for metabolism
  - Cannot be produced in adequate amounts by the body
  - Water-soluble
  - Fat-soluble
Water-Soluble Vitamins
- Eight water-soluble vitamins in vitamin C and B complexes
- Water-soluble vitamins cannot be stored in the body
- Must be provided by daily diet

Fat-Soluble Vitamins
- Vitamins A, D, E, and K
- Can be stored in the body
  - Therefore, daily dietary intake of these vitamins not required

Minerals
- Inorganic elements that play an essential role in biochemical reactions in the body
- Include calcium, chromium, iron, magnesium, potassium, selenium, sodium, and zinc
- Like vitamins, minerals are obtained through the diet
**Water**

- Most important nutrient because cellular function depends on a fluid environment
- Composes 50% to 60% of total body weight
  - Infants have the greatest percentage of body water; older adults have the least
- Obtained through consumption of liquids and fresh fruits and vegetables
- Also is produced when food is oxidized during digestion

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**Food Groups**

- 5 major food groups
  - Meat, fish, poultry
  - Grains
  - Dairy products
  - Fruits
  - Vegetables
- Food Pyramid

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**Principles of Weight Control**

- Ideal weight controversial
  - Should be used only as a guide
- People who are overweight tend to be at greater risk for developing
  - High blood pressure
  - Diabetes mellitus
  - Heart disease
  - Some cancers
  - Other illnesses
**Principles of Weight Control**

- Eat right balance of foods in moderation
- Limit fat consumption to no more than 65 grams of fat per day in a 2000 calorie diet
- Exercise regularly

**Principles of Weight Control**

- Tips to change behavior
  - Realistic goal
  - Commitment to change
  - Exercise
  - Healthy eating
  - Analyzing progress

**Physical Fitness**

- A condition that helps one look, feel, and do his or her best
- Physical fitness is individual
  - Varies from person to person
- Influenced by:
  - Age
  - Gender
  - Heredity
  - Personal habits
  - Exercise
  - Eating habits
Benefits of Physical Fitness

• Decrease in resting heart rate and blood pressure
• Increase in oxygen carrying capacity
• Enhanced quality of life
• Increase in muscle mass and metabolism
• Increased resistance to injury
• Improved personal appearance and self image
• Maintenance of motor skills throughout life

Cardiovascular Endurance

• Fitness assessment
• Heart rate target zone

Muscular Strength

• The ability of a muscle to exert force for a brief period of time
  • Strength & endurance assessment
  • Principles of training
  • Isometric versus isotonic
  • Resistance
  • Sets
  • Frequency
**Muscular Endurance**

- The ability of a muscle, or a group of muscles, to sustain repeated contractions or to continue applying force against a fixed object

**Muscular Flexibility**

- Flexibility refers to the ability to move joints and use muscles through their full range of motion
- Flexibility assessment
- Principles of muscular flexibility
  - Intensity of exercise
  - Repetitions
  - Frequency
- Prevention and rehabilitation of low back pain

**Importance of Sleep**

- Sleep deprivation
- Disruption of circadian timing system
  - Circadian (Latin for “about a day”) rhythm is body’s physiologic ebb and flow as it relates to the earth’s orbit
  - Based roughly on the solar day as the earth revolves around the sun
**Cardiovascular Disease**

- For most, disease process can be altered through healthy living

**Cancer**

- The term “cancer” encompasses more than 100 diseases affecting nearly every part of the body
- All are potentially life-threatening
- Fundamental cause of all cancer is a change or mutation in the nucleus of a cell
- Most common cancers are linked to one of three environmental risk factors:
  - Smoking
  - Sunlight
  - Diet

**Steps in Cancer Prevention**

- Eliminating smoking
- Making dietary changes
- Minimizing sun exposure; using sun screen
- Regular physical examinations
- Watching for the warning signs
- Periodic risk assessment
## Cancer Warning Signs

(\textit{CAUTION})

- Change in bowel or bladder habits
- \textit{A} sore throat that does not heal
- \textit{U}nusual bleeding or discharge
- \textit{T}hickening or lump in the breast or elsewhere
- \textit{I}ndigestion or difficulty swallowing
- \textit{O}bvious change in a wart or mole
- \textit{N}agging cough or hoarseness

Source: The American Cancer Society

## Infectious Disease

- \textit{H}ygiene
- \textit{U}se engineering and work practices
- \textit{R}eport exposure promptly
- \textit{P}eriodic risk assessment

## Injury Prevention

- Job-related injuries can be minimized by being knowledgeable about:
  - \textit{B}ody mechanics during lifting and moving
  - \textit{B}eing alert for hostile environments
  - \textit{P}rioritizing personal safety during rescue situations
  - \textit{P}racticing safe vehicle operations
  - \textit{U}sing safety equipment and supplies
### Body Mechanics During Lifting and Moving

**Guidelines**
- Only move a victim you can safely handle; get additional help if needed
- Look where you’re walking or crawling
- Move forward rather than backward when possible
- Take short steps, if walking
- Bend at hips and knees
- Lift with legs, not back
- Keep load close to the body
- Keep patient’s body in-line when moving

### Hostile Environments

- Carefully evaluate scene for safety concerns
  - Do not enter scene until it is safe
  - Coordinate all activities with law enforcement personnel
  - Follow protocols for establishing Medical Incident Command
  - Plan an entrance and escape route(s)
  - Above all else, stay alert and be prepared for the unexpected

### Rescue Situations

- Examples
- Essential actions
- Safe rescue requires:
  - Appropriate use of protective gear
  - Specialized training
  - Safe rescue practices
**Safe Vehicle Operation**

- Factors affecting safe vehicle operations:
  - Safe driving of vehicle
  - Safe and appropriate use of escorts to and from emergency scenes
  - Adverse environmental conditions (e.g., inclement weather)
  - Appropriate use of audible and visual warning devices
  - Proceeding through intersections safely
  - Parking at emergency scene
  - Maintaining “due regard” for safety of all others

**Safety Equipment and Supplies**

- Appropriate use of safety equipment and supplies important aspect of injury prevention
- Standards for protective clothing and equipment required by OSHA
  - These and other standards (such as those established by NFPA), are used to ensure employee safety

**Safety Equipment and Supplies**

- Body substance isolation equipment
- Head protection
- Eye protection
- Hearing protection
- Respiratory protection
- Gloves
- Boots
- Coveralls
- Turnout coat/pants
- Specialty equipment
Mental and Emotional Health

- Factors that contribute to mental and emotional health
- Realizing value of having personal time
- Being connected with family, peers, and community
- Accepting personal differences that make people unique

Substance Misuse/Abuse Control

- Misuse/abuse of drugs and other substances may lead to chemical dependency (addiction) with a wide range of effects on physical and mental health

Warning Signs of Addiction and Addictive Behavior

- Using a substance to relieve tension
- Using an increasing amount of the substance
- Lying about using the substance
- Experiencing guilt about using the substance
- Avoiding discussion about using the substance
- Interference with daily activities due to substance abuse
Substance Abuse Management

• Methods used to manage substance abuse depend on the type of substance being misused
• Substance misuse/abuse control may include a combination of professional counseling, physician-controlled medication therapy, and support programs

Cigarette Smoking

• Health ramifications
• Why people smoke
  • Peer pressure
  • Relief of stress
  • Weight control
  • Addictive properties of nicotine
• Smoking cessation resources

Anxiety and Stress

• Stress results from the interaction of events (environmental stimuli) and the adaptive capabilities of the individual
  • Usually seen as generating negative affect (fear, depression, guilt, etc.)
  • Also experienced with positive events
Anxiety and Stress

- **Anxiety**
  - Uneasiness or dread about future uncertainties
- **Eustress**
  - “Good stress”
  - Response to positive stimuli
- **Distress**
  - “Bad stress”
  - A negative response to an environmental stimulus

Meditation and Contemplation

- Setting aside some “personal time” for meditation and contemplation can greatly enhance mental, and perhaps even physical, health

Spirituality

- A unique characteristic of human existence
- Should not be overlooked as an effective means for some to achieve mental and physical well-being
### Family, Peer, and Community Connections

- Belonging to groups can affect a person’s motivation and performance in very positive ways
- People tend to associate with others most like themselves (e.g., family members, coworkers, members of community and religious organizations)
- These groups provide a “connection” with people who share similar values and interests

### Freedom From Prejudice

- Accepting cultural differences allows individuals to:
  - Learn about other cultures
  - See cultural variations in a positive light
  - Affirm the values of these differences

### Stress

- Types of stress
- Phases of the stress response
  - Alarm reaction
  - Resistance
  - Exhaustion
**Alarm Reaction**

- “Fight or flight” phenomenon
  - Occurs when any emergency situation threatens one’s safety or comfort
  - Is considered positive (eustress)
  - Prepares the individual to be alert and to defend himself or herself

- Mediated by autonomic nervous system (ANS) and coordinated by hypothalamus
- Hypothalamus triggers the pituitary gland to release adrenocorticotropic hormone (ACTH)
- Physiologic responses
  - Reaction takes only seconds
  - Reaction is stopped when body realizes event is not dangerous
  - Individual begins to adapt to the situation, and bodily functions return to normal

**Resistance**

- Stress response raises the level of resistance to the agent that provokes it and others like it
- If the stress persists, a person’s reactions to the stress may change
- Example:
  - As you become accustomed to emergency response with lights and sirens, the alarm reaction is no longer elicited to the same degree
Exhaustion

• As stress continues, coping mechanisms are exhausted
• Adaptive resources used
• Resistance to all stressors declines
• Increased susceptibility to physical and psychological ailments
• Rest and recovery are needed

Factors that Trigger the Stress Response

• Many factors can trigger the stress response. Examples include:
  • Loss of something that is of value
  • Injury or threat of injury
  • Poor health or nutrition
  • Frustration
  • Ineffective coping skills

Physiological and Psychological Effects of Stress

• Normal anxiety
• Detrimental reactions to anxiety/stress
Physical Effects of Anxiety/Stress

- Person may be aware of:
  - Heart palpitations
  - Difficult/rapid breathing
  - Dry mouth
  - Chest tightness/pain
  - Anorexia
  - Flushing, diaphoresis
  - Frequent urination
  - Dysmenorrhea
  - Aching muscles and joints
  - Backache, headache

- Person may be unaware of:
  - Increased blood pressure and heart rate
  - Blood shunting to muscles
  - Increased blood glucose
  - Increased adrenalin
  - Reduced GI peristalsis
  - Pupillary dilation

Warning Signs & Symptoms of Stress

- Physical
- Emotional
- Cognitive
- Behavioral
Causes of Stress in EMS

- Environmental stress
  - Noise
  - Inclement weather conditions
  - Confined work spaces
  - Poor scene lighting
  - Spectators
  - Rapid scene response
  - Life-and-death decision making
- Psychosocial stress
  - Family relationships
  - Conflicts with coworkers
  - Abusive patients
- Personality stress
  - Need to be liked
  - Personal expectations
  - Feelings of guilt and anxiety

Reactions to Stress

- Individual reactions to stress are “customized” based on:
  - Previous exposure to a specific type of stress
  - Perception of the stressful event
  - Personal coping skills

Adaptation

- Dynamic, evolving process whereby one “learns” successful ways to deal with stressful situations
- This process:
  - Usually begins with using defense mechanisms
  - Coping skills then developed
  - Followed by problem solving
  - Culminating in mastery
Stress Management Techniques

- Methods used to initially manage stress include:
  - Reframing
  - Controlled breathing
  - Progressive relaxation
  - Guided imagery

Other Stress Interventions

- Being aware of personal limitations
- Peer counseling and group discussions
- Proper diet, sleep, and rest
- Pursuit of positive activities outside of EMS to balance work and recreation
- Intervention programs may be available through EMS agencies, hospitals, and other groups

Critical Incident Stress Management

- “Critical incidents” include tragedies, deaths, serious injuries, hostage situations, or threatening situations
- CISM is an organized, formal, peer and mental health support network and process
  - Enables emergency personnel to vent feelings
  - Facilitates understanding of stressful situations
**Critical Incident Stress Management**

- CISM is designed to help emergency personnel understand their reactions.
- Reassures them that what they are experiencing is normal and may be common to others involved in the incident.

**Components of CISM**

- Pre-incident stress training
- On-scene support to distressed personnel
- Individual consults
- Defusing services immediately after a large scale incident
- Mobilization services after large scale incident
- Critical incident stress debriefing 24 to 72 hours after an event
- Follow-up services
- Specialty debriefings to non-emergency groups in the community
- Support during routine discussions of an incident
- Advice to command staff during large scale incident

**Defusing**

- Usually takes place within 8 hours after an event
  - Allows initial release of feelings
  - Allows opportunity for people to share their experiences
  - Informal gathering of the people involved in the event and two-person CISM-trained teams who are also peers
  - Usually lasts < one hour
Debriefing

- More formal than a defusing
- Conducted in a confidential setting
- Usually takes place 24 to 72 hours after the event
- Conducted by a specially trained CISM team of other emergency services personnel and mental health workers
- Only those present at the incident are allowed to attend a debriefing

CISM

- Situations in which CISM should be considered
  - Line of duty injury or death
  - Disaster
  - Emergency worker suicide
  - Infant/child death
  - Extreme threat to emergency worker
  - Prolonged incident which ends in loss or success
  - Victims known to operations personnel
  - Death/injury of civilian caused by operations
  - Other significant event

Reducing Crisis-induced Stress

- Rest
- Replace food and fluids
- Limiting exposure to incident
- Change assignments
- Provide post event defusing/debriefing
- Other approaches to help manage stress
**Patient and Family Needs**

- Stages of grieving process
  - Elizabeth Kubler-Ross
- Five predictable stages of dying:
  - Denial
  - Anger
  - Bargaining
  - Depression
  - Acceptance

**Conveying News of a Sudden Death**

- Gather family in a private area
- Advise them of patient's death, with a brief description of circumstances causing the death
- The words “death” or “dead” should be used
- Be compassionate
- Allow family to see their relative if they choose

**Common Needs of the Paramedic when Dealing with Death and Dying**

- Paramedic may experience some of the stages of grief
- Support from friends, coworkers, family following incident
- Opportunity to process specific incident and obtain closure important
- Use available resources to avoid effects of cumulative stress
Developmental Considerations

• Newborn to age three
  • Watch for changes in
    • Eating or sleeping patterns
    • Irritability
  • Suggestions

• Three to six years of age
  • Watch for changes in
    • Behavior patterns with friends and at school
    • Difficulty sleeping
    • Changes in eating habits
  • Suggestions

• Six to nine years of age
  • Suggestions
  • Nine to twelve years of age
  • Suggestions
  • Elderly
    • Concern about other family members
    • Concern about further loss of independence
    • Concern about cost

• Elderly
  • Concern about other family members
  • Concern about further loss of independence
  • Concern about cost
**Preventing Disease Transmission**

- Air/bloodborne pathogens
- Exposure
- Cleaning, disinfection, sterilization
- Body substance isolation, universal precautions

**Common Sources of Exposure**

- Needle stick
- Broken or scraped skin
- Mucous membranes of eyes, nose or mouth

**Protection from Air / Blood-Borne Pathogens**

- Follow engineering and work practices and maintain good personal health and hygiene habits (including frequent hand washing and general cleanliness)
- Maintain immunizations for tetanus, diphtheria, polio, hepatitis B, MMR (measles, mumps, and rubella), and influenza
- Conduct periodic tuberculosis screening
- Practice body substance isolation (universal precautions) in all patient encounters
**Protection from Air/Blood-Borne Pathogens**

- Appropriately clean, disinfect and/or dispose of used materials and equipment immediately
- Use puncture-resistant containers to dispose of needles and other sharp objects
- Separate and label all soiled laundry (clothes, bed linens, etc.) and equipment until the items can be appropriately cleaned and disinfected
- Conduct periodic health-risk assessment

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**Documenting and Managing an Exposure**

- Wash the area of contact thoroughly and immediately
- Immediately document the situation in which the exposure occurred
- Describe actions taken to reduce chances of infection
- Comply with all required reporting responsibilities and time frames

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**Documenting and Managing an Exposure**

- Cooperate with incident investigation
- Be screened for tuberculosis and other potential diseases
- Obtain proper immunization boosters
- Obtain a complete medical follow-up