

Taking Charge of Your Health

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INTRODUCTION

What is health? Is optimum health and wellness a myth or a reality? Who can achieve this lofty goal and how is it accomplished? Where can an individual go to find the necessary knowledge and skills to succeed in this lifelong process? These thought-provoking questions are but the tip of the iceberg when it comes to the monumental quest of a lifetime of exceptional health and wellness. Think about the healthiest person you know. Are they young or old, male or female, highly intelligent or of average intellect? Is this unique human being of high notoriety or simply a commoner?

With this mental scenario still unfolding, pause and get personal...How about *you*? Are you disease-free, active, and happy and living a vital and empowered lifestyle? This issue of health definitely evokes both thoughts and questions that challenge our very being. When it comes to health, I often think of “life lines” and the current popular TV show “Who Wants to Be a Millionaire?” If I was a millionaire, could I use my millions to enhance or regain my health? How may I “spend” or use my “life lines” to my greatest advantage? Who would I call? How much would it cost? More “million dollar” questions, wouldn’t you agree?

From the lighter side to a more serious side, optimum health and wellness issues are challenging the civilized world to rethink our definitions of health. There is indeed a new paradigm – a shifting away from commonly held thoughts and beliefs that health can be defined or conceptualized as a progressive span of life lived in the absence of a minor or major illness that begins at birth and proceeds to a maximum expectancy that is extremely difficult to modify. As difficult as it is to define, health is considerably more than the absence of a minor or major illness. It is equally remarkable that analysts and most knowledgeable scientists with widely divergent backgrounds come close to the same definition as they struggle with defining health.

Health is partly a matter of how well all the body’s component parts are working, (biological) and it is partly a consequence of behavior or a reflection of our ability to live in harmony with nature and with other people (environmental). Likewise, health is also partly a product of personal and philosophical values, intimately tied to our concept of self. Thus, summarily, health is what we think we ought to be and what we think we really are (psychological) (Insel and Roth 2001).

One other of the best known definitions of health in modern times comes from the World Health Organization, which defines health as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.” In the last few years, this idea has been carried a step further and we are beginning to realize

that even disabled people (such as paraplegics or the mentally handicapped), in a sense, are role models of good health.

In their interesting book *Vitality and Aging* (1981), wellness researchers James Fries and Lawrence Crapo assert that vitality, defined as the functioning power of the organism, is in fact the very essence of health. They also argue that vitality is not something available only to the young, but that it can and will be maintained well into old age as lifestyles in the United States slowly become more healthful. Maintaining vitality is not automatic however, and requires attention, vigilance, and effort. Conversely, this requirement leads us to another key aspect of health – health as a matter of conservation.

In the heydays of the past, of wonder drugs and magic bullets, it almost seemed as if we could buy health at the drugstore, but those days are gone. Many of the illnesses that were of concern to society one hundred years ago are different from the illnesses we are concerned about today. Most of the earlier concerns were communicable diseases: tuberculosis, smallpox, influenza, diphtheria, and polio. These fatal diseases spread to people of all social and economic levels and to people of all age groups, including the young. However, the wonder-working miracle drugs worked their wonders, reducing the impact of infectious diseases by a factor of almost fifty to one. Although alarm about the spread of the communicable disease such as AIDS continues to increase, the diseases that claim the most lives today are noncommunicative. The greatest health problems that we now face are largely those of chronic and degenerative diseases in a wide variety of forms. They include cardiovascular disease, cancer, diabetes, arthritis, obesity and the like, that usually affected only people in the middle and later years. These diseases are now resurfacing and claiming the lives of younger adults as well as children.

Unlike many of the diseases of the past, today's diseases and disorders are greatly influenced both by the daily habits a person establishes *before* adulthood and by the lifestyle he and she eventually pursues as an adult. The factors that determine the length and quality of an individual's life are most often the person's own choices in several areas such as: the use or abuse of tobacco, alcohol, and illegal drugs; as well as, prescription drugs. It is also critically important that accurate and timely up-to-date health information be disseminated and applied; —replacing one's own habits. The responsibility for maintaining health and for minimizing the risk of developing chronic and degenerative diseases and disorders rests with the individual and begins early in life.

It is clear, then, that we cannot reasonably expect future technological and biological advances to be of the same magnitude of the 1900s, but the great breakthroughs of tomorrow will almost certainly come in the behavioral sphere. Newly discovered drugs and products will emerge as a result of an expanded understanding of why we behave as we do (i.e. choices made, or no choices) and, more particularly, how we can go about changing behavior that is harmful to our health.

A majority of the health problems that pervade this country are self-inflicted. They are rarely inflicted with the aim of self-destruction, but are commonly the result of ignorance and confusion and apathy. It is likened unto a “generational” curse—passed down the family lines from parents to children. Too many people live most of their lives feeling no better than just “all right” or “so-so”, or downright “miserable.” Some do not even know what exuberant health is. Katherine Mansfield, who when she was dying of tuberculosis, wrote in the final pages of her journal:

By health, I mean the power to live in close contact with what I love—the earth and the wonders thereof—the sea—the sun...I want to be all that I am capable of becoming, so that I may be...there’s only one phrase that will do—a child of the sun.

Americans have the highest standard of living in the world in terms of material goods (except for a few very small oil principalities). Yet three major chronic diseases—arthritis, heart disease, and diabetes—partially incapacitate more than 20 million of our citizens. Atherosclerosis, a disease almost unknown in some countries, kills some 2,000 Americans every day and sends thousands more to the hospital. Imagine what an uproar would be made if 2,000 people a day were killed in airplane crashes!

Our infant mortality rate ranks fifteenth in the world. For men, our life expectancy ranks fourteenth, and for women it is a little better, at sixth. The average U. S. adult is about 20 pounds, or 15 percent, over ideal weight from a health perspective. About one person in six is more than 40 pounds over weight. More than 30 percent of the adult population smokes; in spite of the wide spread dissemination of facts on the adverse effects of tobacco use in all its forms. With all these startling statistics, maybe we, Americans aren’t too well off. Clearly, affluence does not equal health.

According to the source: The United States Department of Health and Human Services, National Health Objectives For the Year 2000, Priority Areas include:

- Reduce tobacco use.
- Reduce alcohol and other drug abuse.
- Improve nutrition.
- Increase physical activity and fitness.
- Improve mental health and prevent mental illness.
- Improve environmental public health.
- Improve occupational safety and health.
- Prevent and control preventable injuries.
- Reduce violent and abusive behavior.
- Prevent and control HIV infection and AIDS.
- Prevent and control other sexually transmitted diseases.
- Immunize against and control infectious diseases.
- Improve maternal and infant health.

- Improve oral health.
- Reduce adolescent pregnancy and improve reproductive health.
- Prevent, detect, and control high blood cholesterol and high blood pressure.
- Prevent, detect, and control cancer.
- Prevent, detect, and control other chronic diseases and disorders.
- Maintain the health and quality of life of older adults.
- Improve health education and access to preventive health services.
- Improve surveillance and data systems.

A closer look at these national high priority objectives, led me to make a count of exactly how many of the areas targeted children, and /or adolescents. I was simply flabbergasted to say the least, to count 19 out of the 21 aims were crucial to the health and well-being of children, and health education. Whether or not our children develop chronic or degenerative diseases will depend, to a great extent, on the health education they receive; on the health habits and attitudes our children establish during their school years.

As a parent first, and secondly, as an educator, I am thoroughly convinced that the majority of the items on the above list of national health priority areas, reflect the need for individuals (i.e. parents, teachers, and students) to take responsibility for their own health as society moves into the twenty-first century. Also, I am adamant in my stance that health education today must address this increased responsibility that we all must take for our own health. Health education must provide scientifically accurate information in a timely and prompt framework. Educators and health advocates alike, must heighten awareness about the links between health and personal choice(s).

In addition, health educators must help the student learn how to develop a healthy life-style. It is my belief that the role of health education in the new millennium is to promote positive attitudes, co-operative and consistent positive behaviors, and good healthy choices. Therefore, the previously stated effects will become effective health maintenance and a long-range prevention plan for disease control. Summarily, in order to be effective, a health education program *must* help students:

- Develop skills in wise choices.
- Recognize those decisions that directly affect their personal health and the health of others.
- Acquire accurate health information that enables them to identify and prevent health problems.
- Examine their health attitudes, aptitudes, and values.
- Become aware that health includes physical, intellectual, emotional, and social components.
- Understand that health involves responsibility for oneself, one's family, and the community.
- Develop a positive, healthful enthusiasm for life and living.

TEACHING STRATEGIES

The goal of this curriculum unit is to provide teachers and/ or educators, first, with a ready guide that can be used to “jump-start” their instruction of important health concepts. It is my intent to lead and/ or facilitate students’ understanding of the human body (i.e. The Body Systems); instruct learners in the roles Diet and/ Exercise plays in being healthy; developing an understanding of Nutrition and/ Essential Nutrients necessary to avoid Disease(s) and Chronic Disorders; and finally, to motivate and /or empower young learners to modify/ change their attitude(s) and behavior towards being healthy so that they commit to developing and following a Lifetime Plan of Optimum Health and/ Wellness.

There are a variety of ways that can be used to teach this unit; however, it is my desire that teachers, as well as their students, take advantage of and/ or use the co-operative learning strategies, the interactive, technology-assisted activities, which are built into this unit to address ALL students. This method of presenting instruction proves most beneficial, since most classrooms today include students who have a wide range of abilities, learning styles, and academic needs.

STRATEGIES

Strategies for cooperative learning are included to help teachers and students pair or group into teams to reinforce skills and concepts taught and learned. It is suggested that the teacher limit the size of the student groups to: four students minimum, and five students maximum, in order to allow each student member to “take ownership” in the group and actively participate in the collaborative efforts of completing the tasks assigned to the group. Four major “jobs” and or/ management positions will assure that each student member will have equal status within the group. I recommend that the teacher model, and then post the following group roles: Principle Investigator; Maintenance Director; Materials Director; and Reporter and/or Recorder; on students’ desks and/ or seating at student centers. Be sure to include in writing, the specific roles and/ or responsibilities of each position, and establish a rotation system that gives each student many opportunities to “practice” at each role.

Classroom Centers

Classroom centers can be the utilized effectively using a designated bulletin board that “centers” and focuses the learners attention on the main objective(s) and or concepts being taught throughout the lesson. Suggested bulletin Board Centers, and Learning Resources Centers activities along with the material(s), and procedure(s) are included at the end of this unit.

Limited English Proficiency Student

Allow the student to form small groups and take turns reading the lesson aloud. Explain to students that the reading should be cooperative. If an individual student has difficulty with a word, he or she may signal for the group to read aloud together. The signal may be a hand clap, a knock on the table, or a click from a mechanical clicker. The same signal can be used to indicate that the student is ready to resume reading alone.

Reinforcement

Reinforcement or extension activities are given for each lesson and or concept of the unit and all range in a difficulty rating of: Easy, Average, or Advanced. Students may draw and label a diagram of a cell (easy rating); others may choose to build/ or make a cell 3-dimensional (average rating); and still other student(s) may design/teach a game (advanced rating).

Reintroduce and explain the concepts taught in the lesson(s) and utilize a questioning strategy that maybe used for assessing students' progress, and for reviewing and recalling important learned outcomes. Reteaching activities (i.e. games, posters, worksheets) can provide practice in recognizing and understanding vocabulary, as well as, in studying and comprehending written content.

Interactive Activities

Suggestions are provided for motivating students to “personalize” their learning objectives; and are also provided for assessing/charting students progress, and for reteaching, reinforcing, and extending the concepts and outcomes of the unit.

LESSON PLANS

Lesson Plan One: The Parts That Make up Your Body

Overview and Objectives This lesson introduces students to the smallest parts of their entire body. Parts too small to see without a microscope. It takes millions of these tiny parts to make up just one part of the body, such as bones and skins. It asks them to write what they already know and what questions to ask (what they want to know) about the parts of their bodies. This lesson also provides important pre-unit assessment information about students' understanding of keywords and vocabulary.

Specific objectives for this lesson are: After receiving instruction and various learning activities, students should be able to:

- **Identify** the parts of a cell.

- **Describe** the functions of the cell parts
- **Identify** several types of body tissues and explain the job of each.
- **Describe** what an organ is.
- **Explain** what makes up a body system.

Background

Cells are the smallest parts of your body. There are many different kinds of cells. Your skin and your bones are made up of parts too small to see without a microscope. The different kinds of cells in your body have different shapes and do different jobs, but almost all cells have the same three basic parts.

All cells have a thin outer covering called the **cell membrane**. The cell membrane holds the cell together. It lets in water and everything else the cell needs. The cell membrane also keeps out most things that could harm the cell. Almost every cell has a small center called the **nucleus**. The nucleus of a cell contains DNA, which programs the cell and determines its function. For example, a cell's DNA determines whether it is a nerve cell, a muscle cell, or another kind of cell.

Within the nucleus of everybody cell are chromosomes. They contain the chemical DNA, which is responsible for determining each person's inherited traits. Scientists have discovered that chromosomes can be damaged or even broken through exposure to certain environmental factors. For example, radiation and certain drugs can both damage chromosomes.

Cell membranes seem to have tiny bumps on the outside. Many of the bumps are openings in the membranes that let water into the cell. Other openings allow small nutrient molecules to pass through, but keep large molecules out.

Materials

For each student

- 1- health journal
- 1- pencil with eraser/ or eraser able pen

For each group of four students

- 1- Set of four illustrations/ or plastic models of a cell that clearly details the cell's parts.
- 2- Notebook, paper, or chart paper for brainstorming
- 3- Assorted colored pens, markers

Preparation

1. Make copies of Team Assignment Sheets for each group
2. Prepare a teaching Transparency and/or PowerPoint slide presentation depicting the cell's parts and functions
3. Arrange the materials at the distribution center

4. Preview the lesson. Decide if you need one session or two to complete the lesson. Consider how assessment will be made and recorded. Make arrangement(s) for: “On-task Rewards;” “Caught Doing It Cooperatively.”

Procedure

Ask students to assemble into groups (i.e. teams). Explain that members of each group should work cooperatively to pantomime the function of each cell part. Have students carry out the following procedure:

1. Each group may choose to pantomime the cell membrane, the nucleus, or the cytoplasm
2. Once the group’s members have agreed on a topic, they should recall the function of that cell part and decide how it can best be demonstrated.
3. The members should work together to assign roles. Some group members should also work to gather props or make signs and labels for the pantomime.
4. After allowing time for rehearsal, have each group present its pantomime to the class.
5. Following each performance, ask the class to guess which cell part was represented.
6. Each group should mark their assignment Record Sheets and place in health journals.

Final Activities

1. Discuss with students the key words that best define the cell parts’ function.
2. Use the following Questioning Strategies: Critical Thinking/Analysis
 - Why do you think there are so many kinds of cells? (Possible response: Each kind has a different function.)
 - Why does a cell have a membrane? (To hold the cell together, to let in those things that are needed by the cell; to keep out most things that could harm the cell.)

Extensions

Science Labeling Diagrams (*Easy*)

Have students draw and label a diagram of a cell. Remind them to include the cell membrane, the nucleus, and the cytoplasm. Under the label for each part, students should write one sentence that describes the function of that part.

Reading- (Vocabulary) Designing Games (*Average*)

Have students work together to make cards for a matching game. Each card should contain one of the Key Words or the definition of one of the words. Students should lay the cards face-down on a table and take turns choosing two cards and turning them over. Students who choose two cards that match

a word with its definition may keep both cards. If the cards do not match, the cards are returned faced-down. After all words and definitions have been matched, the student who has the most pairs is the winner.

Writing/Language Arts Advertisements (*Advanced*)

Have students write a radio advertisement. Each student should write a script in which a cell speaks for itself and tells why it is so important in the body. Tell students to provide accurate descriptions of the cell and its functions in the body.

Lesson Plan Two: Choosing the Right Foods in the Right Amounts

Overview and Objectives

This lesson focuses students by asking the following questions:

- What Problems Can Occur From Eating Too Little Food?
- What Problems Can Occur From Eating Too Much Food?
- How Does Growing Affect The Amount OF Food You Need?

These questions prompt students to discuss how their answers will lead them to understanding of key words and concepts such as choosing foods in the right amounts.

Specific Objectives of this lesson are: After the student complete this lesson, student should be able to:

- ✓ **Explain** why different people require different amounts of foods.
- ✓ **Explain** how nutritional deficiencies occur.
- ✓ **Identify** the cause of scurvy.
- ✓ **Describe** the dangers of eating too little or too much.
- ✓ **Explain** the dangers of eating foods that contain too much cholesterol or too much sugar.

Background

To stay healthy, you need to eat a balanced diet. A balanced diet has foods from all the Food Groups on the Food Pyramid Guide, in the amounts that are recommended for nutritional needs. However, if you eat foods with more of the energy nutrients than you need, you may gain weight. Getting too little or too much of the nutrients you need, can cause health problems.

People need different amounts of nutrients at different stages in their lives. For example, if you are growing quickly and are very active, you need more of certain nutrients than does someone whose growth has slowed or one who is not very physically active. The amount of each kind of food you can eat is also important. Eating too much of some foods and too little of others can mean you are not getting the proper nutrients in balance.

When only a few kinds of foods are available, individuals may not get enough of certain nutrients. Too little of a certain nutrient in the diet could result in a **nutritional deficiency**. People who do not get enough nutrients over long periods of time can cause many health problems. They suffer from a condition called **malnutrition**. Long-lasting malnutrition can seriously increase the risk of certain diseases, malformed bones, and fatigue.

Malnutrition can also result in reduced mental ability. Malnutrition can even become fatal and lead to death. Even in the United States, where the problem for most people is over-eating, there are many people, especially children, who suffer from malnutrition.

Another disease, called **scurvy** is caused by lack of Vitamin C. Before the 1700s, sailors who stayed at sea for many months at a time often contracted scurvy. This disease caused their gums to bleed and their teeth to become loose. James Lind, a Scottish doctor, did some experiments and noticed that sailors who had scurvy got better if they ate fresh lemons and limes. Lemons, limes, and other citrus fruits have Vitamin C. Vitamin C in the diet prevents scurvy.

Nutritional deficiencies still exist today. When a person eats too little protein, he or she may experience muscle weakness and weight loss. A lack of calcium in the diet can cause soft bones that can be broken more easily, and weaken teeth.

Metabolic rate, or the rate at which the body burns food, varies from person to person. Genetic factors may help to determine why one person tends to gain more body fat than another. However, a balanced diet and regular exercise are most important for keeping your weight at the proper rate. Recent health report findings suggest that with regular aerobic exercise can help regulate a person's metabolism.

Materials

For each student

- 1 health journal
- 1 pencil with eraser/ or eraser able pen

For each group of four student Teams

- 1 Large sheet of chart paper, newsprint, or mural paper
- Assorted colored pens, markers
- Magazines with pictures of foods and/ or snacks
- Scissors

Paste, glue, and/ or tape

- Preparation**
1. Prepare a Teaching Chart and/or a PowerPoint Presentation that list:
 - Food Guide Pyramid
 - USDA Recommended Dietary Allowances
 - Nutrients
 - What Each Nutrient DoesThis should be a chart design or transparency.
 2. Arrange the materials at the distribution center.
 3. Preview the lesson. Decide if you need to reteach the concepts presented earlier in the unit.
 4. Make and copy a scorecard for students' Team Activity: "You Are What You Eat"- A Visual Aid
 5. Have written directions for the students activity to be viewed by entire class (i.e. on projection screen or as a handout)

- Procedure**
- Teacher should give oral directives. Explain that members of each group should work cooperatively to create a visual aid. Have students carry out the following procedures:
1. Tell students to divide a large sheet of color paper into two parts.
 2. On the first part, they should draw or paste pictures of healthful foods.
 3. On the second part, they should draw or past pictures of "junk foods."
 4. When they are finished, students should explain why the foods they chose are healthful or not healthful to the human body.
 5. Each group should mark their Scorecard and assigned rating.

- Final Activities**
1. Lead a discussion with students on what makes a balanced, nutritional diet.
 2. Use one group's visual aid to engage students in Critical Thinking (SYNTHESIS) to explain how it is possible to have a nutritional deficiency even if you eat a lot of food. (Possible response: It is possible, because you might eat only a few healthful foods, and lots of "junk foods" from the Fats and Sweets Group; you will not have a balanced diet.

- Extensions**
- Writing (Spelling) Nutri-Cards (Easy)**
Have students design "Stay Well" greeting cards that emphasize good nutrition habits. They may send them to friends, family members, teachers as reminders that nutrition counts.

Mathematics-Pound Per Pound (*Average*)

Have students weigh each other; then post or record the weights, omitting individual students' names. Have student figure the average student weight for their class. They may use student computers to chart and graph each class weight averages.

Science-Food Savers (*Advanced*)

Allow students to select a method of food preservation and using Internet Access, research that method. They should prepare to present their findings to the class along with actual food samples.

Social Studies-Let's Talk Healthy (*Easy*)

Students will discuss the eating disorders anorexia and bulimia. They should ask one another; "Why these disorders are considered social issues as well as health issues?" "Who really suffers with these disorders?" "Where can help be found?"

CLASSROOM CENTERS

Bulletin Board Center

Title: Keep Your Day in Balance

Materials

- ✓ Label for the title "Keep Your Day in Balance"
- ✓ Bulletin board paper
- ✓ Pencils or markers
- ✓ Envelope containing strips of blank paper
- ✓ Stapler
- ✓ Pushpins

Procedure

1. Cover the bulletin board with paper and attach the title to the board.
2. Draw a large balanced scale on the paper, and label one side "Rest" and the other side "Exercise."
3. Staple the envelope containing strips of blank paper to the upper right portion.
4. Tell students to think about their daily activities and how those activities provide a balanced of rest and exercise.
5. Students should write their rest and exercise activities on separate slips of paper and post each slip on the appropriate side of the scale with pushpins.
6. When students are finished, they should appear to be balanced with the students' exercise and rest activities for the day.

Learning Resource Center

Title: Looking for Balance

Materials: Reference books

Sheets of paper with the following information:

Name _____ Date _____

Looking For Balance

Exercise Rest

Monday:

Tuesday:

Wednesday:

Thursday:

Friday;

Comments:

Procedure

1. Ask students to read about exercise and rest in the books in the Learning Resource Center.
2. Each student should take a “Looking For Balance” chart and write his or her exercise and rest activities on the chart for one school week.
3. Explain that students should describe each activity and the amount of time spent doing the activity.
4. At the end of the week, have students evaluate their charts. They should add comments or set goals they want to achieve.

Bulletin Board Center

Title: Keep Your Day in Balance

Materials

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- ✓ Bulletin board paper
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- ✓ Envelope containing strips of blank paper
- ✓ Stapler
- ✓ Pushpins

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6. When students are finished, they should appear to be balanced with the students' exercise and rest activities for the day.

ANNOTATED BIBLIOGRAPHY

Teachers Resources

ABC's of The Human Body. Reader's Digest, 1987.

A clear text, photos, and illustrations that provide answers to questions about the human body.

Ames, Louise Bates, Frances L. Ilg; and Sidney M. Baker. *Your Ten-to-Fourteen-Year Old*. Delacorte Press, 1988.

An excellent resource that will prove to be valuable in identifying behavioral changes common for this age group; and helps parents, also, understand their pre-adolescent child.

Bodanis, David. *The Body Book: A Fantastic Voyage to the World Within*. Little, Brown, 1984.

This books offers a close-up view of what happens inside our bodies.

Brody, Jane. *Jane Brody's The New York Times Book of Health*. Times Books, 1997.

A "must-have" for this unit; It presents an in-dept look at the human body. Topics include: Good health versus bad health---and the many benefits of exercise.

Carper, Jean. *Jean Carper's Total Nutrition Guide*. Bantam, 1987.

Helps adults learn what nutrients are where to find them, and how to include them in the diet.

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This exciting reference book uses spectacular medical drawings, yet it is most detailed which reveal the body's structures, anatomy and functions. It also describes the causes, symptoms, diagnosis, and treatment of a wide range of diseases and disorders.

Elkind, David. *The Hurried Child*. Addison-Wesley, 1987.

Allows educators, parents, health advocates, etc. to take a serious look at the stresses children face today.

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This encyclopedia presents a summary of human biology, anatomy, and physiology; outlines the more common diseases; and discusses in a clear, general way, the diagnosis and treatment of diseases.

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A superb resource that covers the entire subject area of health education with all the research done for you.

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Excellent reference guide that will never become outdated since it gives users page and index searches for updated information on every entry.

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Present an eclectic collection of humorous and amazing facts about the human body.

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Presents a thorough discussion of health and nutrition.

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Presents another in-depth look at the human body.

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Offers good advice on how to help children develop healthy attitudes toward eating.

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This book can be shared by both teachers and students... it is a challenging collection of puzzles, and projects, experiments, quizzes, and over 50 other activities.

- Arnold, Caroline. *Genetics: From Mendel to Gene Splicing*. Franklin Watts, 1986.
 Gives a complete history of genetics from the eighteenth century to the present.
 Excellent book for the advanced reader to use as extra credit and further reading / and study
- Baines, Rae. *Health and Hygiene*. Troll Associates, 1984.
 Explains how proper nutrition, exercise, cleanliness, and rest help maintain a healthy body.
- Baldwin, Dorothy, and Claire Lister. *Your Heart and Lungs*. Franklin Watts, 1984.
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- Bender, Lionel. *Science Facts: Human Body: Its Mysteries and Marvels*. Crescent, 1992.
 This book offers a refreshing new perspective to help us learn about the human body; to understand how it is constructed and how it works.
- Brown, Fern G. *Hereditary Diseases*. Franklin Watts, 1987.
 Discusses how diseases can be passed through the chromosomes of parents to their offspring.
- Cole, Joanna. *The Magic School Bus: Inside the Human Body*. Scholastic, 1989.
 A nonfiction written with just the right amount of “kid appeal” to captivate and keep the reader’s attention.
- Donner, Carol. *The Magic Anatomy Book*. W.H. Freeman, 1986.
 Relates the adventures of two children who are “blinked” into the human body to explore its wonders.
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Ward, Brian. *Body Maintenance*. Franklin Watts, 1983.

Explains how the systems in the human body work together to keep it healthy.

Ward, Brian. *Food and Digestion*. Franklin Watts, 1982.

Diagrams and excellent text help to explain the process of digestion.

Ward, Brian. *The Lungs and Breathing*. Franklin Watts, 1982.

Good overview of the respiratory system; and tells how air is used by our bodies.

Ward, Brian. *Skeleton and Movement*. Franklin Watts, 1981.

Presents an excellent study of the respiratory system and tells how air is used by our bodies.

Your Wonderful Body! National Geographic Society, 1985.

Presents an overview of the human body and describes how it works and how to care for it. Lots of vivid color photographs and illustrations.

Computer Software

Bones and Muscles: A Team to Depend On. (Apple) Marsh Media.

Colorful graphics help a cartoon character, Femur the Bone, explain how the bones and muscles work together.

Health Watch. (Apple) Mindscape, distributed by SVE

Nutrition, dental care, and physical fitness are the topics of this program's three activities: *Eating Well*; *Brush Up*; and *Fitness Fun*.

Rov-A-Bot... The Incredible Skeleton. (IBM) Educational Activities, Inc.

Advanced animation and graphics introduce students to the skeletal system. By building a simulated robot and reconstructing its skeletal system, students learn through discovery how the skeletal and muscular systems interact.

Filmography

Bones and Muscles: A Team to Depend On.

(videocassette with teacher's guide) Marsh Media.

An animated character, Femur the Bone, explains how the bones and muscles work together.

Audiovisual Resources

Inside Your Body. (4 filmstrips with sound cassettes) National Geographic.

Reinforces the importance of exercise, sleep, diet, and physical wellbeing. Titles:
Your Wonderful Body; Your Bones and Muscles; How Your Body Uses Air and Food;
and How Your Brain Helps You.