

Growing Up Fit Preschoolers in Motion

Why Be Concerned?

Most children do not get enough exercise from all the running and playing they do. In today's visually oriented, high-tech society, there is too much observation and not enough participation and not enough participation in physical activities. Pediatricians, physical educators, and child development specialists urge children of all ages to engage in vigorous activity on a regular and habitual basis. The following findings point to one fact—children do not get enough exercise.

- According to the President's Council on Physical Fitness and Sports, kids are not in any better shape than they were 10 or 20 years ago, and may be in poorer condition in areas such as endurance.

- The American Academy of Pediatrics reports that about 40 percent of elementary school-aged boys and 70 percent of elementary school-aged girls cannot do more than one pull-up; a third of the boys and half of the girls cannot run a mile in less than 10 minutes.

- Other studies show that 40 percent of children 5 to 8 years of age have at least one risk factor for heart disease, and 50 percent of all children do not get enough exercise to develop healthy hearts and lungs.

- Pediatricians say inactivity poses a serious health problem for children. Research shows American children ages 6 to 10 watch about 24 hours of television a week, as much time as they spend attending school.

Children aren't learning about physical fitness at school, either. A 1986 survey of 435 Iowa school districts by Iowa State University showed that Iowa schools are below

average in the amount of time spent in elementary physical education class.

Forty percent of the surveyed districts offered less than one hour a week of physical education instruction in grades one through four. Only 11 percent of those districts scheduled more than 1½ hours of physical education a week.

Researchers in motor development and physiology say children need a minimum of 30 minutes of physical education instruction a day. Data from the Iowa study showed that school children were not getting enough time in physical education classes to develop adequate levels of

Design a Program for Physical Fitness

Fitness for children is no different than fitness for adults. Both age groups must be involved in a program that addresses five health-related areas: cardiovascular endurance, muscular endurance, body composition, muscular strength, and flexibility.

Health-Related Fitness

A health-related fitness program for young children that follows the F.I.T. principle with the proper frequency, intensity, and time of exercise—requires unique and concentrated planning. The following activities offer a place to begin. They are designed for children 3 to 6 years of age.

Note: At first some of these activities may be difficult for the children to perform. They still will contribute to muscular endurance.

1. Cardiovascular Endurance

This important area of fitness is the ability of the heart and lung systems

physical fitness. Thirty-eight states require more physical education than Iowa. The report concludes that children need to develop good habits early in life.

Involvement of parents and teachers helps build good habits, according to the 1988 President's Council on Physical Fitness. A Youth Fitness Survey of 5,000 boys and girls aged 6 to 9 showed that children who exercised with their parents at least 20 minutes a week had less body fat. The survey also showed that children who spent more time in recess had less time for physical education instruction; children who had more recess were less physically fit.

to transport and use oxygen during exercise. It is best measured in a laboratory setting. However, cardiovascular endurance also can be estimated by measuring heart rate response to sustained exercise.

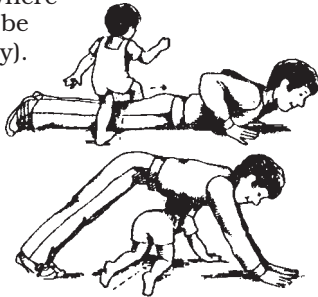
A child who becomes short of breath during a normal walk around a mall or up a flight of stairs may have low cardiovascular endurance. Walking, cycling, aerobic dancing, swimming, rope jumping, and jogging are examples of aerobic activity, exercise that forces the body to handle large amounts of oxygen for a sustained time. Children who do not have the skill to perform these suggested aerobic activities can try games that use large muscle groups. The games also must be varied so they can be played for longer than a few minutes.

The Leg Hop—An adult sits on the floor with legs slightly apart. The child runs around the adult, jumping over each leg. Occasionally, the adult puts both legs together and the child jumps over both legs at once. The



adult's legs can be raised slightly to vary the activity to keep the child's interest.

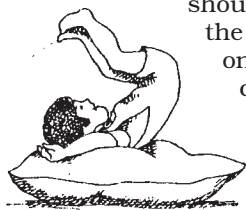
Over and Under Game—An adult lies face-down on the floor while the child steps over the adult's legs (at the point where a step can be taken easily). Occasionally, the adult will push up on hands and feet to make a bridge for the child to crawl under.



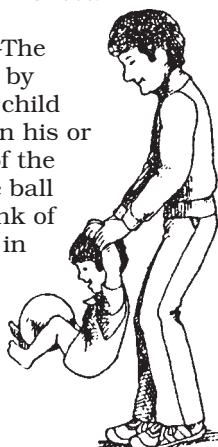
2. Muscular Endurance

This is the ability to use skeletal muscles repeatedly for long periods of time. Muscular endurance is needed to develop motor skills (see later section), to achieve proper posture, and to maintain a muscle's shape. As in cardiovascular fitness, muscular endurance is improved by activities such as walking, bike riding, swimming, and running that require many repetitions of the large muscle groups.

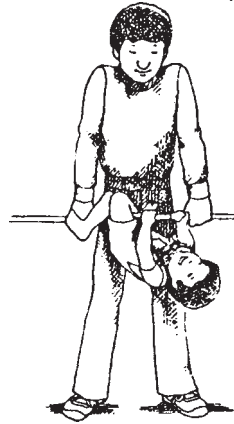
Backward and Forward Rolls—Make sure the child's chin is close to the chest and that weight rests on shoulders and not on the head. Practice on a sofa or cushions. To help develop strength in the abdominal area, keep knees close to chest.



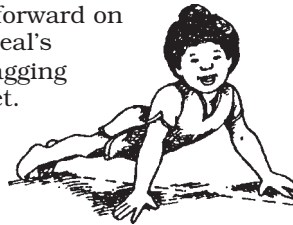
Knee-grab Game—The adult lifts the child by the arms while the child holds a ball between his or her knees. Object of the game is to keep the ball from dropping. Think of other fun activities in which the child is holding up his or her weight, such as hanging, swinging, climbing, and pulling.



The Human Bar—The adult holds a wooden pole or sturdy broomstick securely with both hands while the child swings from it as an exercise bar. First, the children should try to hang only by the hands. Then the child can try to hang by hands with knees crossed over the bar.



The Seal Walk—The child walks forward on hands (the seal's flippers), dragging body and feet. Keep the child's back as straight as possible.



3. Body Composition

This is the ratio of muscle to body fat. The regulation of body fat is essential

to offset the dangers of obesity, diabetes, and cardiovascular disease.

Diet is as important as regular exercise to control body fat. All pediatricians have ideal height and weight charts calculated by age and sex. The amount of body fat can be measured in a simple skin-pinch caliper test.

4. Muscular Strength

This is the ability of muscle groups to move or resist a workload. Strength is tested by using a maximum effort in a single muscle contraction. Good muscular strength helps a child to better perform daily activities and to reduce risk of joint injury.

Strength usually is seen in upper-body and abdominal regions. In older children, this is measured by pull-ups or push-ups. If a child has trouble climbing over a low wall, muscular strength may be lacking. Skeletal muscles are strengthened by activities that force them to work harder than usual.

Pole Jump Game—The adult holds a wooden pole or long, sturdy broomstick parallel to the floor. The adult

What Is Physical Fitness?

There are as many definitions of physical fitness as there are fitness programs. The only consensus is that physical fitness has several dimensions. For the purposes of this publication, physical fitness will include wellness, or health-related aspects, and motor, or skill-related aspects. A child becomes physically fit as he or she attains a minimum efficiency in five health-related areas, described in this publication. The child also must participate regularly in activities that build motor skills.

Health-related physical fitness often is built using a formula called the F.I.T. Principle. All three parts of the formula—frequency, intensity, and time—must be included in a good fitness program.

Fitness requires dedication, that is, a physical activity performed repeatedly on an ongoing basis. Frequency in the F.I.T. Principle shows how often you exercise. To develop fitness, you must exercise at least three times a week.

Fitness also requires effort, or the amount of energy used before a physiological benefit can occur. This is known as intensity. To achieve fitness of the cardiovascular system, for example, you must work the heart at 60 to 80 percent of its maximal heart rate.

The third part of fitness is time, or how long you exercise. Physical activity must last for more than just a few minutes to strengthen your various body systems. Twenty to 30 minutes of activity is recommended.



then moves the pole slowly back and forth, just a few inches off the floor, so the child can try to jump over it. Repeat the exercise raising the pole a little higher each time. Each exercise is done 10 times as the adult counts to 10. Other equipment can be used, such as ropes, hoops, pieces of carpet, or bean bags.

5. Flexibility

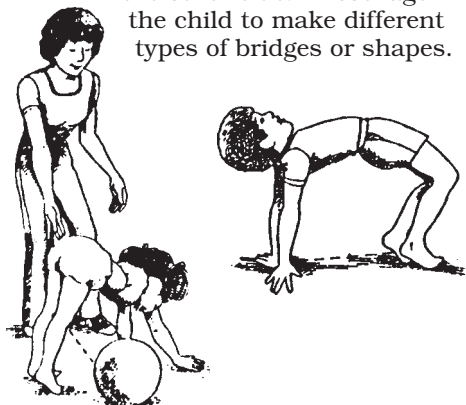
This is the ability of a muscle group to move through a joint's full range of motion. Flexibility helps prevent injury and maintain proper posture.

Flexibility usually decreases with age. Although most children have good flexibility, those children who cannot touch their toes need to improve flexibility. Stretching slowly each day, and holding the stretch, will improve flexibility. Plan several fun stretches, too.

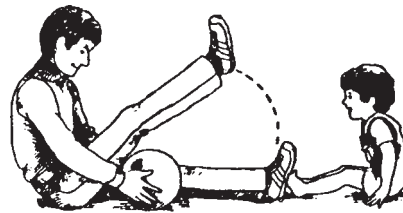
Stepping Through the Stick—The child holds a sturdy wooden pole or broomstick in front of the body with both hands. The child should be able to step through the triangle formed by the arms and the pole, both backward and forward, without letting go of the pole.



The Bridge—The toddler forms a bridge, either face-down or face-up, on hands and feet with arched back. The adult rolls a ball under the bridge, steps to the other side to retrieve it, and rolls the ball back to the other side. Encourage the child to make different types of bridges or shapes.



Follow the Ball—The adult and toddler sit on the floor facing each other, about 2½ yards apart with legs apart. The adult rolls a ball behind the back and under each leg, lifting each leg without bending the knee. The adult rolls the ball to the child, who repeats the exercise. Vary the exercise with other positions.



High-Low Ball—The toddler sits on the floor with legs crossed. The child brings a ball as high as possible over the head and stretches to put the ball on the floor as far away as possible.

Skill-Related Fitness

Motor skills are very important in achieving skill-related fitness. One of the best approaches to improve motor skills at the preschool age is to introduce children to a variety of movement. This will help them learn basic skills and encourage them to try other activities.

A good motto is: "Teach a little, play a lot." Depending upon the age and development of the child, the parent or preschool instructor may need to teach simple movements such as hopping and skipping, twisting or turning, and catching or striking objects.

Children face both psychological and physical challenges in learning motor skills. Remember that adults sometimes find a new motor task an overwhelming challenge. So do children.

Let's look at a few motor learning principles.

Success Fosters Success—It is important to design tasks at which

children can succeed. Aim for a balance that keeps them from being bored or overwhelmed.

Practice Does Not Make Perfect—Only the correct type of practice and appropriate feedback will lead to mastery of that skill. The child also must be developmentally ready to assume the task challenge.

Simple-to-Complex—Motor learning progresses from simple tasks to complex ones. Offer the child an experience at the simplest task of the sequence first, then move to more difficult tasks.

All motor skills are learned in three steps: the child receives the information, the child processes or interprets that information, then the child uses the right muscles for a response.

For example, the task of catching a ball can be separated into three parts. First, the child sees the ball coming and decides to try to catch it. Second, the child decides where and how soon the ball will arrive. Third, the child uses various muscles, and the ball may or may not be caught.

It is important for a child to clearly visualize and understand a task. He or she must be ready in terms of intellect, physical maturation, and attitude.

There is usually a gap between the age at which children can perform a task and the age at which they can do that task well. For example, a child can throw a ball at age 4 but most will likely not demonstrate a mature pattern of throwing until age 7 or older.

Using Task Analysis

Begin with simplified tasks to teach complex motor skills. Children must experience success before they will try new skills. Look at success as a motivator for learning.

A three-step process called Task Analysis helps parents and educators see the complexity of motor activities. Use this approach to design a positive, successful experience.



Simply stated, Task Analysis puts a movement along a simple-to-complex range. Do an analysis in these three steps.

1. Identify the movement and your expectations—For example, if the task is to “jump down from something,” you expect the jumps will be from increasing heights, with increasing distances, and from different directions.

2. Identify the variables and set a simple-to-complex range—Variables in the learning environment are used to make the task more complex. For example, height may start at six inches (simple) and be raised eventually to two feet.

Direction is another variable. The child may be asked to jump sideways, backwards, or forwards from the object on which he or she is standing. The forward direction is the simplest.

3. Design the tasks—For example, Task one might be to jump down from a six-inch crate onto a carpet square six inches away while facing the landing area. Task two might increase the height by three inches. Increase or change the variables to make the task more complex.

Most motor tasks fit this approach so that even the most difficult skills can be taught in simple increments.

Motor Efficiency and Skill-related Fitness

The second aspect of skill-related fitness involves motor efficiency. Children need some degree of motor efficiency before they will want to participate in and enjoy interactive games, sports, gymnastics, and dance activities.

File: Family Life 4

* The exercises and illustrations were adapted from *Pep Up Your Life: A Fitness Book for Children*, a project funded by The Travelers Companies, Hartford, Connecticut.

Motor efficiency, commonly called “being athletic,” is built in seven areas. They are: coordination, power, agility, reaction time, balance, speed, and rhythmical efficiency. Plan activities in each area for the child to experience. Over time, he or she will become an efficient mover.

Let’s look at each of these skill-related fitness areas.

Coordination—The ability to combine two or more body parts to produce a single, skilled movement

Power—The combination of speed and strength

Agility—The ability to change direction quickly while maintaining balance.

Reaction time—Time needed to react to stimuli and make appropriate muscular response

Balance—The ability to maintain body position

Speed—The ability to quickly or slowly move from one place to another

Rhythmical efficiency—The ability to move in time to an underlying beat

Children can build a good attitude toward movement and fitness by participating in satisfying and appropriate activities during their pre-school years. Parents and educators should try to plan motor experiences that are fun, geared to age and ability, easy as well as challenging, and that allow individual practice and group participation.

Landmarks in Motor Development

Approximate Age for Motor Skills	Skill
2 Years	Walks up and down stairs alone Kicks large ball Descends large ladder, marking time Jumps 12 inches Imitates circular stroke Balances on one foot 1 second
3 Years	Jumps short distance on both feet Catches ball, arms straight Throws small ball 6-7 feet Walks tiptoe Jumps from bottom stair Bounces ball, one hand, 1-3 feet high Stands on one foot Hops on both feet, 1 to 3 steps Jumps 18 inches high Descends long steps, marking time Copies circle and draws straight line Balances on one foot for 5 seconds
4 Years	Catches small ball, elbows in front of body Cuts on line with scissors Descends small ladder, alternating feet Gallops (skillful at 6 1/2 years) Makes designs and crude letters Bounces ball, one hand, 4-5 feet high Jumps 28 inches high, feet together Catches bounced ball
5 Years	Catches small ball, elbows at sides Throws ball well Skips (skillful at 6-7 years) Hops on one foot, 10 or more steps Descends large ladder, alternating feet Walks straight line Copies designs, numbers, and squares Heel-to-toe walk Walks backward heel-to-toe

Source: Perceptual Motor Development Series, by Jack Capon. Pitman Learning, Inc. 1975

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... and justice for all

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