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AUTHOR	Taylor, Billie, Comp.
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ABSTRACT

Articles pertinent to aiding the pre-school blind child are collected in this publication. Topics include discussion of attitudes and emotional reactions important for parents and teachers of blind children, and optimal development in regard to early motor behavior and emotional and social needs. Common areas of parental concern such as discipline and expectations are reviewed. The results and educational implications of a longitudinal, interdisciplinary study of children blind from birth, are reported. Three levels of problems in the blind (organic, perceptual, and emotional) are differentiated, and conceptual behavior is compared for children who are born blind and those who lose sight at early ages. The collection includes poems and a glossary of terms relating to blindness. Discussion of the nature of the handicap has sections dealing with historical, etiological, and medical perspectives. There is an illustrated section describing physiological aspects of vision, so that different impairments can be better understood. A final article reviews play activities that are beneficial for young blind children. (DP)

Compiled by Billie Taylor, Colorado School for Deaf and the Blind, from articles gathered over a period of years pertinent to aiding the pre-school blind child. This booklet is not for sale, but may be obtained for the price of the materials, $1.50.

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When they told me that my child was blind,
That he would never see, I said,
"Then I will be his eyes, he'll see through mine,
I'll lead him by the hand and comfort him
As long as I shall live."
As long as I shall live? Then when I die
He'll be twice blinded. No!
My son must not depend on me.
Man does not see with eyes alone:
I must find schools and teachers who will bring to him
The message of his ears and hands and feeling fingertips
It will be my task to give him courage,
Love of all living things,
Desire for truth, so that at last
My son may stand alone, serene,
A man, ready for all that life may offer him,
And by his spirit's never-dimming light
My son shall see.

Mary Raymond

PRE-SCHOOL BLIND CHILD

No such thing "as a typically blind person" -- all are individuals --many degrees of visual handicap -- some see light, colors, large objects.

Their senses not necessarily initially more acute -- science has proved these are developed as a result of necessity -- concentration and increased practice in hearing, touch, etc.

Since Blind are but a small part of the population, they cannot expect the seeing world to adjust to them; we must help them fit happily and constructively into that seeing world. Instead of "handicapping" the blind further with pity and excessive personal services, we should emphasize the individual's skills and aptitudes and help him develop them. The blind child has every right to independence and self respect, and for the sake of his future survival, we must have the strength and serenity to help him help himself.

In training the child, a good rule is "Never do anything for him that he can do for himself." The kindest and most selfless thing we can do is to control our impulse to help him out. The child must be given the opportunity to help himself, or he will not only be unable to acquire skills and abilities, but he will suffer emotionally, for he needs the vital satisfaction of accomplishment.

We must encourage and stimulate use of touch, hearing, and smell. About 85% of what the sighted child knows, he has learned through seeing. Since the blind child does not have the use of this important faculty, we must allow him a little more time. At graduation from high school most blind children are two years older than sighted children.

Awkward gestures and mannerisms which seem to set the blind apart from other handicapped people are known as "blindisms." Examples of these are: the hands being rubbed together, clasped and unclasped incessantly; the head swayed back and forth, or dropped on the chest; incessant loud talking; failure to face the person with whom he is conversing; standing or sitting too close; constantly rubbing or poking the eyes. All these motions make their victims conspicuous and call attention to a handicap that might otherwise go unnoticed.

What to do about blindisms -- keep the child active and interested in normal activities -- it is usually the bored or lonely child who engages in blindisms. We have to instruct the blind child in many activities which are quite natural to the seeing children.

We must gain the child's confidence and then point out to him, kindly, about his mannerism. The child is usually not conscious of it. Appeal to his sense of pride and his wish to meet the standards of the sighted.

In entertaining a blind child in your home, take his hand in greeting; acquaint him with the house, show him rooms, passages, stairways, etc., always explaining where they lead and their purpose. Let him know which rooms are accessible to him, give him clear directions as to where certain things are -- then let him on his own for awhile to explore.

In walking, GUIDE a blind person. Let him slip HIS arm in YOURS -- he needs only guidance, not physical support. Walk just ahead of him, and he will know the way is clear.

In showing a blind person a seat, it is not necessary to shove him into it -- escort him to the chair and place his hand on the back

or arm. Do not move furniture out of the way; if a blind person knows it is there, he will remember it.

Do not embarrass a child or a blind child by allowing accidents to bric-a-brac; either remove or explain about location and cautions necessary in handling.

It is not necessary to always leave furniture in the same place; but if moved, explain to the child. Toys should be picked up. A child should have a corner or drawer or some place he can call his very own.

Let the blind child help with simple family chores.

Mealtime--stick to conventional plan for setting table, serve small amounts, tell child what foods are served--manners and neatness are as important to the blind as the sighted.

Let blind children do something for you, like singing or teaching you Braille.

Introduce blind child to a variety of new experiences. Let him meet and play with neighbor children. Explain to them about the child's handicap, but don't dwell on it. Take him to concerts, movies, boat trips, hikes, nature study, etc.

All children love guessing games, quizzes, radio, television, talking books. Most children love to use the telephone. Blind children can help others--mail letters, etc. He can plant seeds in a flower pot; a hyacinth bulb planted in a jar of marbles is fascinating. He can take it out and examine roots. He can use clay, have gold fish, a bird, a turtle.

What affects blind children's development? Blindness in and of itself is not the determining factor in the child's development. Rather, failure on the part of adults to know what to expect of a blind child or how to encourage his optimum development creates the problem.

As a basic characteristic of "optimal development" special attention should be given to the degrees of self-motivation, self-reliance, and active interest in the environment displayed by the child.

As with all children, the basic ingredient for encouraging the development of the blind child was found to be the kind of comfortable relationship with his parents, wherein parent and child both experience continuing satisfaction and enjoyment. The child's "psychological" development, in the limited sense of the word, is dependent upon this type of relationship. Yet, in the blind child who depends on it most, the physical handicap operates against achieving it. This happens not only, or even primarily, because of the neurotic elements in the parents' attitudes, but because of the realistic problems involved and the lack of sound guidance to give parents confidence in their ability to handle their child constructively.

There is real danger in failing to appreciate the realistic basis for the parents' anxiety or in assuming that problems must be due to some personality defect on their part. Moreover, there is too little recognition of the heavy demands which meeting the child's needs for optimal development impose on the parents; demands which will tax all their resources of understanding, ingenuity, energy, and emotional stability for extended periods. The blind child seems to be particularly sensitive to the feeling tones of the people around him, though

his behavior often does little to suggest this to the inexperienced observer. This paradox highlights the importance of getting skilled counseling help to the parents as soon as the diagnosis of blindness is established so that they can better understand the youngster's often puzzling "lack of response" as "withdrawal," and learn to encourage his reaching out to his environment, first to friendly persons and, through them as he develops, to the world of things.

This "reaching out," which is being increasingly recognized as basic to the development of all children, assumes particular importance in the case of the blind child, the very nature of whose handicap imposes a serious barrier to its achievement. All too frequently his development is tragically warped and restricted because of the tendency to assume that limited functioning is the necessary and inevitable result of his physical handicap. Rather, the limitations are the response of the child who has been seriously deprived both of emotional satisfaction and appropriate experiences at the successive levels of his development.

Even recognizing the disadvantages of the pressure which comes from expecting too much of the child, we have come to feel that expecting too little in the early period is more prevalent and that this may be even more damaging to his development. Failure to observe and recognize the signs of readiness in the child's behavior and to capitalize on them by providing maximum opportunity for learning new skills is to place serious obstacles in the way of his orderly development. The inevitable frustrations the child experiences is a major factor in

creating emotional problems often of great severity.

This study found that blind children can fit into the same pattern as sighted children and that some will walk at will under a year. Seriously delayed walking is usually only one result of conditions which are unfavorable for the child's progress.

Because of the poor motor development of many blind children, special study was given to those showing so much freedom and skill in their motor development and such a high degree of ability to get about independently and to orient themselves in new situations. It was found that the children with good motor ability and orientation had all had "favorable opportunities" for this type of development. One can predict with confidence that the children who were able to get about freely will be adults who will travel independently, while we may have grave questions, so far as our present knowledge goes, as to the others. According to the findings, skill in orientation seems to bear little or no relationship to capacity as measured by psychological tests or degree of vision.

There has been such consistent evidence of the close relationship between the functioning of the blind child and his total life experience. That the conclusions of any sound evaluation of his capacity depends upon an intimate knowledge of these interrelated factors.

The study indicates that retarded functioning in a blind child with no other major physical handicap should be presumed to be directly related to the complex social and environmental factors in his total experience until proven otherwise by intensive study. There is a great need for differential diagnosis, more study and research of the development of pre-school blind children.

Guide for Parents of a Pre-School Blind Child

The moment a parent knows of his child's eye difficulty, love and sympathy for him should lead the parent to seek the kind of knowledge which would give understanding of the child's opportunities, as well as his limitations. Some needs of the blind child are special and specific, and a parent will want to be informed about them as soon as possible. Very early in life the blind baby requires, for example, greater stimulation and more frequent change of position than the seeing baby.

We should learn to judge and to treat the handicapped child fairly. To indulge him is to deprive him of special guidance to which he is entitled. Something must be expected of him, as of all children; yet, to expect too much would be discouraging. To arrive at a fair judgment of the handicapped child requires some knowledge of the effect of blindness upon him and upon others, as well as some understanding of standards of normal development.

The effect of blindness upon the child's general development will be largely determined, first, by the degree of blindness; secondly, by his general intelligence; and, thirdly, by his environment, including the people who play a dominant role in his life.

An individual grows through his interaction with his environment. The success and the happiness a person is likely to achieve in his life depends to a large extent upon the opinion he forms of himself and the degree to which he can satisfy his needs and desires.

This growth starts at birth and continues throughout life. Through experimentation with his physical environment, in the form of work and play, he gradually gains mastery over it and learns to make it serve him.

By comparing his success in this regard with the success of others and by means of other people's behavior towards him, he forms an estimate of himself as a human being. If all goes well, every child learns that although incapable of succeeding in some directions, he is capable of succeeding in others and is of worth in himself. Because the handicapped child's opportunities for the development of his talents are more limited and because he is more influenced by other people's often mistaken notions about his limitations, it is not easy for him to form a true estimate of himself. It does him great credit, therefore, if he is able to establish a sound self-appraisal and becomes a well-adjusted person. We can render him no greater service than to help him attain this, and no one is in a better position to do this than his parents or guardians.

The main problem of the handicapped child is that of finding his true place in life. Your desire to help your child is hereby directed to this, his chief problem.

REQUIREMENTS FOR HELPING

Love or affection is important, for without it human life all but perishes.

Spiritual values are not necessarily those associated with religious services. They may be values in daily experiences; such as love, friendship, understanding, good will and tolerance, which bring us happiness and prompt us to rise above pettiness, selfishness, bickering and meanness.

The three most important "freedom" in giving a child an opportunity to learn by doing are:

1. Freedom to manipulate objects. No matter how inconvenient it may be to allow him to do so while his movements are still clumsy and

his judgment is yet immature, he must not be denied this privilege.

2. Freedom to move about as much as possible. In the case of blind children who cannot easily assert themselves in this respect, the importance of this need is not necessarily accepted and is sometimes overlooked.

3. Freedom to ask questions. This is a privilege which goes deeper than the other two for it requires an even finer understanding and greater patience on the part of the parents. As the child grows older, the questions will diminish in volume and grow in significance.

You may rest assured that the fact that you encourage these "freedoms" will be appreciated by your youngster even though he is too young to analyze his feelings. You will find that the creative understanding which causes you daily to grant them to him will build up a confident relationship between you and your child.

Parents' Attitude

Importance of devotion --

Your blind child will be more strongly affected by the quality of your devotion than other children. It makes a great difference to him whether your attitude and actions reflect consideration of his real needs or are merely prompted by pity or momentary irritations. It is reassuring to know that true affection will fully compensate for almost any passing mistakes that you may make.

Harmful fears --

Some parents feel inadequate to teach, believing that a blind child must learn and be taught through methods other than those used for a sighted child.

Some parents feel so helpless about the needs of a blind baby that they believe it would be better to give him institutional care from the beginning rather than educate him at home. Other parents, however, believing that the child will be helpless and hurt by a hostile world want to keep him at home to protect him to the end of their days even at the expense of his education and his freedom.

Almost all young parents who find their child is blind are shocked and confused. The resulting confusion is made worse by lack of knowledge. Some parents have been known to upset their child seriously by expectation that some miracle, medical or supernatural, might restore the sight.

This fervent, wishful thinking on the part of some parents has been strengthened in recent years through their misinterpretation of newspaper articles regarding successful corneal transplants and the functions of the Eye Bank. A false impression is cherished by some parents; they believe that there is a possibility of transferring a normal eye which is used in cases deemed to be susceptible to such an operation; only a relatively small number are suitable for this type of surgery.

This state of mind is found in many persons rather than in a few; therefore, you should not be disturbed by your attitude.

It is natural, in fact almost inevitable, that when parents discover they have a blind baby, they are not only sorrowed but shocked. It is a tendency of most of us faced with misfortune to rebel and to wonder why it had to happen to us. To this question there can be no ready answer. Unless we want to give way to the irrational theory that life

has no purpose, we must believe that our problems rightfully belong to us and that a test of character lies in the way we meet them.

Relationship to the Child

In thinking of a child, it is well to realize that he is first of all a definite personality with a life to live and a mission to perform. For this reason, treat him as much as possible as you would a seeing child and do not encumber him with your fears and anxieties about him. Remember that he, like other children, will be a source of joy as well as care to you, and strive bravely to overcome your disappointment; time and energy wasted in such negative feelings impair your usefulness as a parent. Instead, always be ready to give him cheerful encouragement and to build in him the sense of your loyalty and confidence.

Facts to Consider:

1. Acceptance of the fact is essential. It is absolutely necessary that the handicapped child, his parents, and the other members of his family "accept" the fact of his blindness with good grace.
2. The handicap is serious, but by no means disastrous. A child who has never seen suffers no sense of deprivation. You will suffer more than he will, but you will help most by taking the matter philosophically.
3. Home is the best educational environment. Generally speaking, the best place for all children is in their own home, especially during their early years and particularly if they face life with a handicap. What is a good home for normal children is a good home for a blind child.

4. The education of the pre-school blind child--It is a mistake to think that highly specialized methods of education are needed during these early years. It is true that at school age the child must be taught Braille by skilled teachers and that certain special teaching devices, like those used in schools for the blind, are very helpful. During the pre-school period, however, the main test is to lay a solid foundation for good character and a balanced personality. The skills that such a child must acquire before school age can be mastered through ordinary home teaching methods, somewhat modified to meet his needs and applied with greater patience and perseverance than are necessary in teaching other children.

Problems arising from Blindness

1. Guidance and Discipline--By discipline we mean teaching self-restraint rather than imposing punishment. Be certain when you make a request that the child understands what is expected. If you are not clear, he may appear disobedient when actually he is confused.

2. Never forget that he is more easily frightened than others by careless words and threats. One should never make threats to any child. A calm announcement of unavoidable consequences of wrong doing should be substituted and unfailingly carried out when occasion demands.

3. Remember that there is seldom need for scolding or punishment when children are engaged in tasks which interest them. Try to find such tasks; do things together.

4. Cultivate the attitude of not being too surprised or excited at anything that may happen, pleasant or unpleasant.

5. Consider always that the handicapped child experiences much inevitable thwarting which is a strain on his disposition. This calls not for indulgence by you, but skillful guidance.

List of Liabilities

You will want to be on the alert for undesirable but preventable effects which sometimes result from blindness.

1. Passivity or Over-activity -- Because blind children receive much less stimulation than youngsters with vision, some blind children tend to become passive or dull. Others, because of the nature of their eye condition or because of over-eagerness to know what this world is like, flit from one thing to another. This retards normal development of the power of concentration on which so much depends.

2. Unwholesome Attitudes of Others -- Blind children usually have to deal with people who have unwholesome attitudes toward them. They have to develop their self-confidence in spite of such negative attitudes as pity, over-anxiety for their physical safety, etc.

3. Fear of Life -- Some blind children are tempted to retreat into an imaginary world as many adults do who find the real world harsh or uninteresting. If this is not checked by inducing the child to engage in constructive activity, his chances for making a proper adjustment to life will be seriously endangered.

4. Habits -- Some blind children develop mannerisms peculiar to

them, called "blindisms," as well as poor carriage and posture, especially the habit of keeping the head down. Most of them must be taught to face the person to whom they are speaking.

5. Blindisms -- For some reasons never quite fully explained, blind children are apt to develop certain habitual motions, such as shaking or rolling of the body, poking the ears or eyes, fluttering outspread fingers in front of their eyes to see the play of light and shadow. The only explanation thus far given for "blindisms" is that any child whose attention is not constantly drawn to outer interests, a situation which is apt to be true with blind children, tends to concentrate on inner sensations which would normally be ignored. The habit of poking or rubbing the eyes probably originates in the desire to intensify peculiar sensations which may be due to the eye condition. The habit is a common one and easily broken when the child finds other interests.

The Child's Physical Development and Needs

Health needs of blind children are the same as those of other children. When eye condition is the result of other bodily illness or deficiency, special attention must, of course, be paid to the treatment of the illness. You must try to strike a correct balance between activity and sufficient rest. Any tendency toward passivity must be counteracted; yet you should remember that a blind child has to spend much more energy in his work and play than other children. He, therefore, needs more rest than they do, particularly if he shows nervous tension.

For the first three or four months, other than changing child's position frequently, talking and playing with him, often no special training is necessary. Later, it will become apparent that lack of vision makes it difficult for blind child to develop necessary activity. Therefore, he may be somewhat behind others and will require great patience and help from the parents. In teaching him to walk, it may be more difficult for him to gain and maintain his balance; he may hesitate a little longer before venturing forth. It is necessary to provide incentives, such as attracting his attention to an object by making a pleasant sound with it.

If you have a yard, some simple homemade equipment like those used in a nursery can be used; canvas swing, a few stairs, play pen, walker -- this encourages the gain of control over their bodies. The child needs encouragement and self-reliance; by placing confidence in him and allowing him to develop his own methods of caution, he will in time walk very well, go up and down stairs, etc. He will be safer and more dependable than he could ever be if he were constantly checked or excessively watched over.

Posture -- Keeping the head down in some children may be due to their sensitivity to light; to such cases, an ophthalmologist should be consulted as to his advice regarding dark glasses. The totally blind child may do this because there is no reason to raise his head. He needs exercises -- make a game of his carrying books on his head.

Blind children have a tendency to flatfootedness due to their "toeing out," or reaching out with their feet; thus placing the weight of the body on the part of the foot less able to support it.

The Child's Emotional and Social Development

We are surely aware that a change takes place in the child's emotional life as time passes. We expect an older child to be able to take in his stride certain experiences which as at an earlier age used to upset him. Yet the change we expect does not take place in the intensity of the child's feelings, but in his understanding and insight which results in his ability to share in other people's lives.

The two-year-old is entirely encompassed in self; he takes little or no interest in other children. If a five-year-old behaves in this way, there is probably something amiss.

The blind child encounters much greater difficulty in this process and must be understood and helped. Like others, he must learn to accept and share responsibility. It is not easy for him to establish a satisfying relationship with other children, for he cannot quite compete with them on an equal basis. Sighted children may take his toys; he cannot defend himself by physical force. It is not advisable, however, for a parent to always interfere in group play, to "make a baby of him" by constantly taking his part, nor will it be possible in all neighborhoods to start an "educational campaign" in his behalf. A parent can talk with neighbors to gain their understanding and cooperation -- your attitude is important!

As contact with life is necessary for emotional and social growth, it is obvious that by over-protecting a child we are doing him a disservice.

Emotional and Social Needs of the Blind Child

1. Self-amusement -- Very early encourage the child to occupy himself alone. Continue training for self-amusement meanwhile giving him a sense of security by letting him know you are near.
2. Importance of voice -- Be careful that your voice does not inadvertently take on a harsh tone towards him or others. The blind child misses all that is conveyed by means of gesture, bodily posture, facial expression, etc.
3. Playmates -- Try to attract playmates by encouraging them -- provide entertainment and excursions, get play equipment in the yard.
4. School -- Send a blind child to public kindergarten, nursery school, and to Sunday School whenever it is possible. Some school authorities are likely to be unaware that, under certain conditions, a blind child at this age can be fitted into school routine.
5. Personality -- Encourage in your child a pleasant personality and see to it that he makes a good appearance.
6. Poise -- Hardly ever do things for him you know he has learned to do for himself. Be alert to find things for him to do which will build in him a sense of achievement.
7. Prepare him -- When you take him on an excursion, to a friend's house, a store, talk with him beforehand about what he may expect to find there.
8. "See" for him -- Let him know other people are in the room; let him "see" an object in which he may be interested.

The Blind Child's Place in the Family

If the blind child is the oldest and has mastered skills of walking, toileting, etc., there is less rivalry. If blind child and sibling are close in age, they cannot be companions to each other; each is likely to be in the other's way in playing. It is advisable to keep them apart when they are babies.

If blind child is several years younger, the handicap of blindness can be explained to older ones.

The Child's Mental Development and Needs

The blind child must obtain information to enable him to function in this world by using his other senses to the limit and by relying a great deal on memory. Remember that he must construct his world "piece-meal," for he is not able -- as we are, by a mere glance -- to obtain a wealth of information simultaneously; such as, the size, shape, color, relative position of objects and the intervening space between them.

The following suggestions will help you to stimulate his mental life:

1. Give him as many first-hand experiences as possible.
2. Encourage questions and answer them patiently.
3. Build new concepts in his mind correctly by comparing the new thing with something he already knows.
4. Encourage the use of <u>all</u> his senses in obtaining information.
5. Make him acquainted with live specimens of small animals and give him some stuffed animals to learn about. Small replicas of large objects and of large animals are very useful.

Words, speech, and language are the tools of the mind. Words represent objects and qualities and are therefore symbols. A symbol has no meaning to us if it does not represent something we know by experience. We must help blind children to form correct concepts.

Blind children are likely to be a bit late in learning to talk; they sometimes have difficulty with correct pronunciation. This is largely because they have to learn to imitate the proper sound entirely by ear because they cannot see the position of the lips of the speaker.

Some pointers to help:

1. Begin to play with your voice or use something that makes a pleasant sound to attract his attention and let him imitate you.
2. Give him the name of the toy or object that he is handling. Use words to describe his sensations, as "hot," "wet," etc.
3. Talk directly and frequently to your baby, converse with him. This will teach him words and self-expression.
4. Do not keep the radio or television going incessantly. This scatters the child's attention and establishes passive habits of mind.
5. He should listen and participate in conversation in the family group. He must be encouraged to use speech in conversation. Some blind children are very late in taking part in conversations; they do not seem to be aware that response is called for and that questions should be answered. Nursery rhymes are a great joy and of much value to them, as is reading aloud from children's books and story-telling.

A blind child should be taught some planning and orderliness in order to find things. This is a great service to him. Let him take

pride in returning things to their places. Give him a place of his own for toys and clothing. Put up low hooks and hangers in bathroom for his towels, etc.

What to Expect of Your Child

The following are minimum standards of achievement. These were selected from a Social Maturity Scale adapted to the pre-school blind child and based on a study of 100 blind, presumably normal, children. Remember acquisition of skill depends upon exercise, and we cannot expect a child to develop a skill he never had an opportunity to practice. (Toys are very helpful to the child, for toys are really tools. If you cannot afford many, choose carefully; with some imagination you will probably find many things in your home which could be set aside as toy substitutes.)

First Year -- Should be able to --

1. Sit unsupported for several minutes.
2. Pull himself to a standing position and lower himself to a sitting one.
3. Imitate sounds.
4. Drink from a cup or glass, helping to hold it.
5. Stand alone and walk forward when held by both hands.
6. Perform simple pantomime, like pat-a-cake.
7. Hand over a toy on request.

Suggestions for first year --

Do not confine too long to one position.

Let him move about freely while you are near. (Blind children often do not creep.)

Teaching him to take his first steps alone -- have two adults sitting opposite each other with a little walking space, gradually increase this. Then encourage child to run to one and then the other.

Urge him to eat crackers or similar food alone; place his hand on glass when you are feeding him.

Encourage vocal play, try to get him to imitate sounds

Let him help in dressing by extending arms and legs.

Nursery equipment and playthings: rattles, spools, wrist balls, sew bells on cuddly toys, canvas swing, play pen, rocking horse, rubber squealing toys, rubber blocks with bells inside, spoon, tin cup, boxes, and cans.

Second Year Should be able to --

1. Fetch familiar objects.
2. Use a receptacle for carrying small objects from place to place.
3. Handle cup or glass well and replace on table.
4. Eat with a spoon.
5. Walk about freely (some walk up stairs).
6. Indicate needs or desires through use of language and gesture.
7. Use names of familiar objects.
8. Talk in phrases. Enjoy being with other children even though he doesn't actually play with them.

Suggestions for second year --

Self feeding: Let him hold spoon for part of meal, gently guide his arm or hand. Do not expect too much; be patient! Give him a bowl or dish with brim. Do not allow him to use food or

utensils as playthings, and do not divert his attention from "business in hand."

Toilet Training: Take this matter without undue concern. This requires time, effort, and patience. When to begin is difficult to determine. In general, begin some four months or so later than with other children. If he then seems "ready," begin by teaching him to tell you of his needs. Try to keep reasonably dry at first; win his cooperation, praise him for effort to cooperate, never make him feel guilty about failure. Use training pants; provide a convenient and never-varying place for his facilities.

Toys: Pegboard with large pegs, push-and-pull toys, pots and pans with covers, musical toys, nursery table with two chairs.

Third Year -- Should be able to --

1. Remove coat or simple garment, put on with some help.
2. Dry hands by himself.
3. Ask to go to toilet and help with panties.
4. Put pegs in large pegboard without help.
5. Listen to simple story.
6. Use pronouns -- "I," "me," "you," plural form and past tense.

Suggestions for third year --

Good time to start routine; child likes it. He also likes to find things in accustomed places.

Let child help with simple tasks, such as helping put groceries away.

Begin to teach him to wash face and hands.

Tell him stories about activities at home, information about nature, animals, and people.

Play equipment: Clay, blocks of all sizes, large wooden beads or spools to string, dolls, transportation and housekeeping toys, tricycle. Provide low rod and hooks for his towel and washcloth.

Fourth Year -- Should be able to --

1. Jump with both feet from a low box or from bottom steps.
2. Walk downstairs, one step per tread.
3. Unbutton front and side buttons, if not too small.
4. Make recognizable mud pies or cakes.

Suggestions for fourth year --

If you have not taken definite steps to bring some playmates into his life, this is the time to begin. It is a good time for nursery or Sunday School.

Get yard play equipment. Let child know his limitations out-of-doors, and that he must not cross the street.

Can now sit at table, string beads. Can use clay. Build with blocks.

Sharing housework with you with toy equipment is good.

Play equipment: Garden tools, doll clothes with large buttons and buttonholes. Blackboard and chalk for a child with some vision.

Fifth Year -- Should be able to --

1. Care for himself at the toilet.
2. Wash face unassisted.
3. Go next door unattended.

4. Dress himself except tying strings.

5. Dramatize songs or stories.

6. Skip or hop on one foot.

Suggestions for fifth year --

Encourage him to make something with his hands and to finish what he has started, but don't make an issue of this.

The blind child needs help in keeping himself constructively occupied and in getting satisfaction and self-confidence which come only through success; hence the suggestion that we find opportunities for him to make something acceptable enough to be given away as a present, hold him responsible for the performance of some little household duties.

It is not easy to find handicraft material for a blind child of this age for he is likely to be a bit retarded in the development of the motor control and coordination for this work. This is all the more reason for interesting him in it by patient teaching without causing undue strain.

The most likely possibilities are stringing large beads, macaroni; very coarse weaving; modeling objects in clay, such as marbles or a vase; painting with water colors or finger paints for joy of painting, or decorating paper for wrapping.

Blocks are creative material, but, in general, blind children show little spontaneous interest in them; presumably, concepts of architecture are lacking.

Play equipment: roller skates; easel with easel paper; water paints with brush at least one-half inch wide; blackboard; simple

musical instrument--mouth harmonica, triangle, tambourine, drum.

Sixth Year -- Should be able to --

1. Use skates, sled, and wagon.
2. Leave home for school or other destination without undue difficulty in parting.
3. Ask questions about meaning of words and how things work.
4. Adjust to modern kindergarten regulations.

Play equipment: Same as for 5 years

Your attitude about entering your child in public school or a residential school for the blind is important. If the child takes into this wider world a real sense of security derived from your wise and devoted guidance and training during his early years, you will certainly feel that life does truly reward genuine effort.

THE EFFECTS OF BLINDNESS ON CHILDREN'S DEVELOPMENT

Human beings have a marvelous capacity for adjusting to a major handicap, such as blindness. But many factors can affect the quality of adjustment. This becomes abundantly clear during a longitudinal, interdisciplinary study of children blind from birth recently completed at the Northwestern University Medical School. The children were treated and observed, by various specialists in the fields of medicine, psychology, and social work, for an average of about 12 years from the time of their birth. Some generalized observations derived from the study might be helpful to persons who work with blind children, particularly those handicapped both by blindness and real or apparent mental retardation.

General Findings

A consideration of all of the factors with which the study was concerned--from social case histories, medical histories, parents' interviews, and neurological, psychological, and electroencephalographic examinations--leads us to the tentative conclusion that the majority of the children in the study who did not measure up to normal intelligence, and who consequently were not making a satisfactory educational adjustment, were children handicapped by generalized physiological impairments. Only in a minority of cases could we rule out physical factors and place the responsibility for poor development on an emotional basis. But it is difficult to tell what comes first. The parents of an organically impaired child may create emotional problems which obstruct the child's ability to compensate for his handicap.

The "constitution" of the child, for want of a better term, seemed to be the deciding factor in the outcome, if the basic neurological structures were intact. Behavior problems resulted in children who had

We feel that a more realistic approach must be made by those individuals who will have the most contact with the children prior to the onset of mobility instruction. We feel that blind children need to be permitted to have more experience which will utilize the remaining sensory devices so as to be better able to form more accurate concepts of the world around them. Verbal descriptions from the parents or teachers will not suffice. But, rather, the blind child must be permitted to physically explore the world so as to facilitate differentiation of the physical environment and not be forced to rely solely on auditory cues.

It is felt that a congenitally blind child requires concrete perceptions from which a meaningful concept may be formed, with a tendency noted to learn things first in parts in order to later establish an organized whole.

However, the reverse is found to be true in the case of the adventitiously blind child. This child, having had visual experience on which to draw, is able to recall visual images which would aid in the formation of the organized concept. This organized whole can then be broken into tangible parts. It must be remembered, however, that the age at which sight was lost would be operative on the amount of residual visual imagery.

It has been noted by us in our experiences that workers with the blind, as well as parents of the blind, too often persist in the use of the mental imagery of the sighted and thus relate to the blind child in a manner which does not permit the child the opportunity to form an accurate concept. Most often this mental imagery is verbalized to the child with the result being an accurate verbal description of environmental situations by the child, but when asked to function kinestheti-

cally in the same environment, the child will make inaccurate movements. This is due to the ambiguity of the child's verbalization which has been made in sighted terms that are not fully understood by the child. To say this another way, an implied conceptualization gathered from a child's verbalization is not always accurate. The child has been exposed to a sighted person's vocabulary which is visually oriented and is, more often than not, meaningless to the child. Cutsforth has referred to this phenomenon as "the verbal unreality of the child."

We stated that a more realistic approach should be made by those persons who would have the most contact with the blind child prior to the beginning of formal training in orientation and mobility. You may ask just what persons do we mean specifically, and what is the role of the orientation and mobility instructor, if any, to aid these persons. Orientation is accurately defined as "the process of utilizing the remaining senses in establishing one's position and relationship to all other significant objects in one's environment." By this definition, we see that orientation is a never-ending process. Obviously, it begins when the child is born and continues in some form or another for as long as the person lives. Logically then the persons with whom the blind child will have the most contact prior to mobility instruction will be the parents, parental substitutes, and teachers. It is the feeling of this committee that these persons may aid the blind child most effectively in the formation of accurate and meaningful conceptual patterns. It may fall upon the mobility instructor to aid these persons from time to time in the role of a consultant. Ideally, the parents should find it possible to avail themselves of several forms of professional help and consultation.

One form of professional consultation available to them should be an orientation and mobility specialist. Likewise, the teacher in the residential school for the blind, the houseparent of the residential school, the classroom teacher in the resource room of the day school, and the itinerant teacher all should receive the benefits of the knowledge possessed by the orientation and mobility instructor so that these persons may plan and practice methods of instruction which will lead to concept formation by the child and prove to be of benefit to the child when formal orientation and mobility instruction begins.

If we accept the premise that orientation is a never-ending process which begins with the birth of the child, then logically, the persons who must begin the process of concept forming are the parents. There are several methods available to the parents which may aid toward this end. The so-called normal seeing child is permitted and actively encouraged to explore the environment, yet too often this developmental process is denied the blind child. Several authoritative sources have theorized the cause to be related to parental fears for the blind child which are, in fact, the projection of parental fears as imagined if they, the parents, were blind. The gradual increase of awareness of the environment which is encouraged in the sighted child must not be denied the blind child. The sighted child becomes increasingly aware of the life around him as the degree of effectiveness of vision increases. The blind child may only become more aware of the environment by sensory and verbal interpretation. The process of encouragement of tactile exploration may begin while the child is still in the crib stage using toys possessing auditory and tactual stimulation. The child should also be permitted freedom of movement in this early stage so that an accurate

assessment of the body, its capabilities and limitations, may begin from the earliest stage and be continued as the maturation process continues. As the sighted child's environment and knowledge of the environment is widened, so too should the blind child's environment be widened. From the crib the child will move to the play-pen. Here, again, for example, toys may be used to stimulate the child's active role in movement and exploration. From the play-pen the child will move to the floors of various rooms of the house. At this time the parents may use toys which may be rolled and which will give off auditory signals for the child to locate and retrieve. This may prove to be valuable later in life as the mobility instructor works into areas of sound localization. The child, while being permitted to crawl on the floors of the rooms, is in the position of receiving the first introduction to orientation to objects and furniture in the rooms. As a natural sequence, the child will then be moved outdoors as weather permits so that orientation to the outside world may begin. From the yard, and as the chronological age increases, the child will move into areas in the neighborhood and the community. The parents' role during these stages must be one of encouragement and interpretation of the surroundings. The physical reality of the world may be explained to the child as he experiences new facets of the areas. Such concepts as driveways, garages, parking strips, trees, signs, mail boxes, to name a few, are real physical things to which the child may be introduced.

Accompanying the physical maturation of the child, there must be a maturing of the social being. The parents must be honest with the child as to the limitations and potentials of the child. These must not be the

imagined measurements of the parents but realistic ones which may be engendered by the use of consultative agencies. The child must be corrected in the same manner as are the contemporaries of his age group. The child must be given daily tasks and responsibilities in the home just as are the siblings and the playmates. This will aid the child in becoming familiarized with his role, give experience in interaction of groups, and aid in the familiarization to particular areas of the home. The idea that a blind child is able to do several things as well is also served in this type of activity.

Another beneficial aspect which may result from the above-mentioned pattern of parental guidance is that, by permitting the blind child to explore the physical world and make it meaningful, a pattern may be established in which the child is not satisfied to just let the world exist about him, but actually becomes curious about the unknown physical monstrosity in which he exists. It has been noted by several leading workers with the blind, and we have all noted the same tendency, that the curiosity of the blind child is easily sated. Being unable to receive visual stimulation, the blind child is often content with being incurious about his surroundings unless they have a direct bearing on his own person. Encouragement in the practice of seeking knowledge, investigating, identifying, and interpreting real life situations at an early age will make the instruction process for the persons who will be working with the child at a later date easier and much more meaningful to the child.

Now the child is ready to progress to the more formal learning situations which are found in the school setting. The work which has

been done by the parents in the home will now be done by the classroom teachers and the houseparents in the residential school milieu; by the resource teachers in the integrated school program as well as other classroom teachers; and perhaps by the itinerant teacher in the home setting. All of these people should be prepared to continue the concept formation pattern which has begun in the home.

Before we may expect these individuals to aid the orientation and mobility instructor by continuing this training, these persons should receive some forms of in-service training so that everyone is using the same language, so to speak. They must be appraised of the best methods of familiarization and orientation to classrooms, hallways, and the yard. They must know that familiarity with such concepts as north, south, east and west, for example, can be worked into not only the actual familiarisation with the school itself, but that these and other similar concepts, lend well to the actual classroom learning situations.

The teachers who are working with the blind must utilize the same procedures as those utilized by the parents, i.e., they must permit tactile exploration followed by verbal description and interpretation, or vice versa.

A diversified physical training program should be offered so that the concept of the body and its limitations may take place. Competitive sports activities which consider at all times the theory of the "success pattern" should be encouraged so that the blind child is able to attain some form of physical and muscular toning as well as some form of status rank with the peer group. It should also be remembered that sports activities have incorporated within them several forms of concept formalizations which will reinforce concepts introduced in other areas. For

example, wrestling aids in the formalizing of concepts concerning the body structure. These are not the only reasons for the inclusion of these and other sports activities but were used only to cite the advantages inherent in these activities.

In the school, the pattern of assigning daily tasks and responsibilities to the blind child may become even more sophisticated. For some, this may be the first opportunity to receive group experiences and responsibilities. The teacher must be realistic in the appraisal of what types of responsibilities to assign the blind child but must not be hesitant to require him to become active in this type of assignment. Also, the houseparent in the residential school must require him to play the same type of active role in that particular setting.

Those working with the blind children, particularly in the classroom, must be instrumental in the encouragement of helping the child be curious, and eager to explore not only the formalized textbook learning program but also the reality of the physical world.

Those persons involved in the school situation must follow up what the parents have started in the realm of corrective measures. The blind child must not be permitted to do something which may be considered socially inappropriate, with the teacher rationalizing that the child is blind and does not know better. Everyone, who works with a blind child in his early stages, acts as a social thermometer. The corrective measures used, however, should be fair, realistic and meaningful for the child.

These, then, are some of the ways in which we feel that more meaningful and accurate conceptual formations may be introduced to the blind

child. We also feel that their inclusion in the child's developmental process will not only have a positive carry-over into the mobility instruction program, but also in all new learning situations in which the child, and later the adult, will embark. We feel that the acquisition of more sophisticated concepts cannot accrue unless the more basic concepts which we have discussed have been introduced and assimilated by the child.

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BASIC CONCEPTS OF BLIND CHILDREN AS THEY RELATE TO PROBLEMS OF ORIENTATION AND MOBILITY

One of the problems with which we, as mobility instructors, have been confronted quite often is the lack of concept formations, or highly inaccurate concept formations, in many of the blind children with whom we have worked. The task of instructing these children is made a more arduous one when the mobility instructor is required, for example, to develop concepts of a meaningful and accurate nature in a child of the early teens. Not only is this a learning task, but most often, it is an UNlearning task first, and a learning task second. The purpose of the report of this Committee is to first submit a workable definition of "Concept" and then to point out some areas in which the formalization of concepts may take place prior to the time mobility instruction begins.

First, let us define "Concept." Webster defines a concept as being "an idea of what a thing in general should be." Webster also says that a concept is "a mental image of a thing formed by generalizations from particulars." For the purpose of this report, we may work with the second definition, with the following modification. We may consider the "particulars" to be percepts. Our definition would then become, a concept is a mental image of a thing formed by generalizations from percepts. To further define concept, then, we must submit a definition for percepts. Again, to quote Webster, a percept is "an impression of an object obtained solely by use of the senses." Carl Davis theorizes that a concept is a meaningful organization of percepts. That is to say, that the individual perceives, and by perceiving forms percepts. These percepts are then amalgamated into a meaningful order to form a concept.

a traumatic upbringing, but in such cases we did not see behavior which simulated physical disability. On the other hand, brain impairment often resulted in low intellectual levels and inadequate adjustment even in families where all other factors were optimal.

We found no convincing evidence that prematurity coupled with oxygenation or blindness itself has resulted in a greater amount of brain damage than might have resulted from the same degree of prematurity itself and the prenatal conditions or possible trauma which contributed to prematurity. However, blindness, especially from birth, so limits the ordinary information flow available to the person that, in the absence of compensatory experience, the child is not likely to reach the same functional level as he might have done with normal vision.

We have seen children with gross multiple handicaps make good academic progress and develop apparently normal personalities without serious emotional problems. Others lacked either self motivation and ability, or were too damaged by parental rejection and lack of opportunity for healthy growth.

Some Observations

The neuropsychological effects of visual deprivation may be due to impairments in any of three levels of functioning, or to a combination.

The first level is the organic. Impairment here may be due to damage of the brain by events similar to those causing blindness, such as those associated with a very light birth weight or severe illness. It may also be due to the reduction of neural impulses originating in the optic nerves and normally stimulating the brain at many levels. Generalized neurological impairments may limit general intelligence, and resulting

learning and perceptual disabilities, with an overlay of emotional instability, may require unique educational procedures. (The diagnostic team approach--as undertaken by the psychologist, the pediatric neurologist, the ophthalmologist, and the social worker, and aimed at understanding all the factors in the child's adjustment--is essential for the development of sound recommendations to educational specialists and parents about what the child can achieve through what approaches.)

As yet we do not know how the deprivation of sight directly affects the child through changes in the brain's information handling capabilities --whether it is through the biological effects of a low number of impulses coming into the cortex, or through the effects of experiential limitations, or as a deleterious overlay of emotional deprivation.

The second level of impairment may be in perceptual integration. While blind children appear to be highly sensitive to the attitudes of their parents, they tend to be less able to get independent confirmation of the appropriateness of their attitudes from those outside the close family. (Blind children usually have endured some degree of social isolation and this, coupled with dependence on verbalization of experience as a substitute for visual integration and the inadequacy of perceptual data for intersensory confirmation of the environment, may lead to emotional problems and inadequate intellectual functioning.) The psychological consequences of limitations in perceptual and learning experience when interacting with the consequences of minimal brain damage can produce severe intellectual retardation. However, if the child is able to compensate for his lack of sight by utilizing his other senses, and has experienced healthy emotional relationships he may achieve a normal or even high level of intellectual productivity, despite complicated

handicaps.

The third level of impairment is in emotional functioning, and is the secondary effect of the unfavorable reactions from others, especially from the parents, to the visual handicap. This leads to distortions of normal social relationships.

When a mother brings home a blind infant--especially after weeks of initial separation from him because of his need for continued hospital care--she may have difficulty feeling the normal joy and pride in her newborn. Too often she is made to feel the pain and even the "curse" of having a handicapped child, by the expressions of sympathy or embarrassed false cheerfulness of friends and neighbors. Fortunately, many parents of blind children do establish a sound relationship with the baby and learn to love him and enjoy him despite his handicap and other people's reactions. (But some parents feel a deep guilt which interferes with their ability to love the child.) Others bear the burden of the child as a "cross," which brings them no closer to real love for the child.

Parental anxiety may result in either of the following damaging attitudes: perpetual overprotection; or expectation of more from the child than is realistic. Such attitudes, of course, affect the child's emotional growth, for one's self concept is, to some extent, the internalization of the attitudes of others toward oneself.

Of course, as Allport points out, it is necessary for the individual at some point to stop being a reflection of the opinions around him, and to form a self-concept based on his actual inner abilities, interests, and strivings. But (to achieve objectivity requires confirmation of all the senses that the self is an individual, separate, and, to some degree, independent of others.) Since vision is the sense which inherently

presents the outside world as external, it is instrumental in the natural development of ego differentiation. Fortunately, but sometimes with difficulty, the interaction of the remaining senses in a blind person permits the verification of externality and thus ego differentiation.

Some Differences

Differences in the adjustment problems for the child born blind and the child who loses his sight even at an early age lie in both the social and the psychological spheres. Children blind from birth never have to adjust to blindness per se, and never have to accommodate to the loss of vision as do older children blinded by illness or accident. But the child who "becomes" blind realizes that he will never see again, and his feelings of hopelessness and despair may cause chronic anxiety and depression.

Blindness from birth may have less consequence for the child's own psychological self-concept, once formed, but (children born blind tend to be more affected by other people's attitudes toward them.)

Often a child may be educated as blind but have sufficient sight for easy travel and object recognition. We have concluded from our study that any degree of vision is a favorable factor for development, and, although we have not the supporting data, that the longer a blind child has had some vision the better. There is no evidence whatsoever that partial sight is a worse handicap than total blindness because of a conflict in whether the child behaves as a blind or a sighted child. Each "blind" child with some vision who was questioned said that his vision was an advantage and in that way he was better off than his totally blind classmates. For the child who can see objects to be treated as a blind may be an annoyance to him, but not a source of deep emotional conflict.

(There is often less motivation for the partially sighted child to learn to use many of the aids for the blind, since he to some extent can depend on vision. This is especially true of training in techniques with the cane for travel. The partially sighted person may learn to rely on his other senses more readily if he is blindfolded during training.)

One child with partial vision found it easier to read Braille by sight than by touch. He never got to be a good Braille reader, but the problem was solved by placing him in a class for the partially sighted in which he used books with large type.

Partially sighted children who lose what little vision they have tend to regress in their development. On the other hand, when a child who has been blind from birth has his sight restored by removal of congenital cataracts, he tends to rely upon the more familiar auditory and tactile-kinesthetic cues for a long time. Gradually, as what he sees conforms to his perceptions from his other senses, his vision takes precedence.

Von Senden reports the case of a girl who for a long time after vision was restored had to stop at the top of a flight of stairs and feel her way down with her eyes closed.

The perceptual distortions reported by many blind people after sight has been restored are mainly due to faulty spatial perception mediated by the non-visual senses. One glance tells the seeing person all the spatial relationships of the objects around him. If this kind of spatial sense is ever achieved by the totally blind, it is by painstaking serial exploration and may never be accurate.

Persons blinded in later life continue to use visual imagery and tend to imagine the world in visual terms, even though the information they receive is from the other senses. Visual imagery retains its

organizing function and objects that are located by touch are fitted into the world of visual memory.

The mental picture of the world given in non-visual terms as it must be to the blind person is beyond the imagination of a seeing person, just as it is impossible to explain to a person who never saw what it is like to see. The words we use are the same, but the meanings are different.

We evaluate the adjustment of the blind to a seeing world. Good general intelligence is the key factor to a successful adjustment, but it may be impaired by emotional problems arising from unsatisfactory affectional relationships with parents and other people significant to the child.

A blind child with neurological impairments faces even greater difficulty, both in adjusting to the social world of human relationships and to the physical world, and in obtaining learning experiences from the environment. However, there is evidence that many children with mild neurological disorders in infancy and early childhood tend to compensate, so that by adolescence little or no evidence of the earlier disability remains. The proper emotional background for a child, enabling him to overcome an impairment and make a good life adjustment, may alleviate the problem; and a deprived emotional atmosphere may aggravate it.

(Professional understanding, based on the teamwork of several professions, is necessary for diagnostic evaluation of each child.) The many blind children who achieve a satisfactory adjustment and function at an outstanding level of achievement demonstrate the power within human beings to overcome severe physical and emotional handicaps.

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CHILDREN LEARN WHAT THEY LIVE

If a child lives with hostility, he learns to fight.

If a child lives with fear, he learns to be apprehensive.

If a child lives with pity, he learns to feel sorry for himself.

If a child lives with jealousy, he learns to feel guilty.

If a child lives with encouragement, he learns to be confident.

If a child lives with tolerance, he learns to be patient.

If a child lives with praise, he learns to be appreciative.

If a child lives with acceptance, he learns to love.

If a child lives with approval, he learns to like himself.

If a child lives with recognition, he learns to have goals.

If a child lives with fairness, he learns what truth is.

If a child lives with security, he learns to have faith in himself, and in those about him.

If a child lives with friendliness, h learns the world is a nice place in which to live.

.....Anonymous.....

Personnel & Training

Colorado School for the Deaf and the Blind
Colorado Springs, Colorado

PARTIAL LIST OF HELPFUL HABITS FOR THE BLIND TO ACQUIRE FOR SOCIAL SUCCESS

Good posture

Look (attempt to) at the person you are talking to

Do not "rock"; do not "poke" eyes

Show a smile when it's expected--a pleasantry, a joke--humorous incidents

Look at the person who is talking to you

Check your clothes; buttons buttoned? Skirts straight? Zipped up?

Clean, when you should be clean

What does hair look like?

Don't comb hair in public; don't chew gum in public

Don't lean into your plate when eating

Close mouth when chewing

Use napkin

Can you take care of your own clothes, tie your shoes, tidy your room, make your own bed?

If there are vending machines, can you use them?

NEVER DO ANYTHING FOR THE BLIND CHILD IF HE CAN BE TAUGHT TO DO IT FOR HIMSELF.

NATURE OF THE HANDICAP -- Blindness

Etiology

There are three major groups which stand out among those causing blindness. These are, in order of numerical importance, conditions whose exact cause is unknown to science; those due to general disease; and those due to prenatal influence, hereditary or type unspecified. Altogether these account for an estimated 75% of all blindness.

The four most important single causes of blindness are found in the first two categories. The leading causes, senile cataract and glaucoma, account for an estimated 15 and 13%, respectively. Both of these conditions are associated with the aging process and are far more common among older persons. With almost 50% of all blind persons in the 65 and over age group, it is not surprising that an estimated 29% of all blindness is due to these two causes.

Diabetes and vascular diseases are in third and fourth with 11 and 7% of all blindness, respectively. With the increase in the proportion of older persons in the population an increase in blindness due to these diseases is to be expected.

Prenatal conditions were responsible for an estimated 16% of the total causes of blindness. Conditions in this category are those which are hereditary and those which are congenital, but whose exact cause has not been determined or is unspecified.

There are considerable differences in the leading causes of blindness for different age groups.

Prenatal factors accounted for an estimated 65% of all blindness for the under-five age group. For the 5 - 19-year-olds this cause is responsible for 48% of the blindness and RLF, 33%.

Among adults there are many more causes which are of significance -- no one cause stands out dramatically. As for total cases, all ages, senile cataract is the leading cause with glaucoma, second; prenatal influence, third; diabetes, fourth; and vascular diseases, fifth. While RLF will contribute a great deal of blindness to this age group in the future it will not become a significant cause for adults.

NATURE OF THE HANDICAP -- BLINDNESS

History of Blindness

In the evolution of society the blind have been considered and treated fundamentally three different ways. In primitive society they were thought unable to survive and were either killed or exposed and left to starvation. Then with the founding of the great religions a decisive change was produced. A humanitarian attitude became prevalent, which gave the blind not only the right to live but also to be protected. At the end of this period, several blind individuals had proved by outstanding achievements that their adaptation to normal life was possible. The accumulation of such examples culminated in the rise of the present period which is characterized by the integration of blind into society. It is in this period that we find the beginning of planned educational attempts. The first school for the blind was established by Valentin Hauy in Paris in 1785. In this country Dr. Samuel Gridley Howe founded the first school for the blind in his father's house in 1832 in Boston, Massachusetts. The next year it moved to the Perkins estate as a result of a donation by a Mr. Thomas H. Perkins where the school has been located ever since.

Since 1830 numerous attempts have been made to secure information on the number and characteristics of blind persons in this country. None of these has been satisfactory or produced reliable statistics on prevalence or incidence. Between 1830 and 1930 the blind population was enumerated in connection with each decennial census. Statistics were provided according to age, sex, race, cause of blindness, age of occurrence and other factors. Counts were inaccurate, however, because of difficulties in defining and identifying blind persons. Also cause data were not reliable since they were based on the blind person's knowledge of his eye condition rather than on a medical diagnosis.

In 1930 the committee on statistics of the blind was formed under joint sponsorship and support of the National Society for the Prevention of Blindness, and the American Foundation for the Blind. It was charged with the responsibility of studying the problem and setting up standardized procedures for development of comparable data. It recommended that the census enumeration of the blind be discontinued.

The committee developed a standard classification of causes of blindness, a standard form for physicians report of eye examination and a classification of visual acuity measurements. Shortly after the turn of the century the prevalence of blindness among children dropped dramatically. As medical science found effective preventive and corrective measures for ophthalmia neonatorum and some other major causes of blindness among infants and young children, staffs were reduced.

However, in 1942 a new eye condition was reported -- retrolental fibroplasia (RLF) -- affecting for the most part prematurely born infants. By 1955, when medical research isolated the major cause of this condition, as the administration of high concentrations of oxygen to prematurely born infants, thousands had been added to the number of visually handicapped children. In addition to this new development, some other eye diseases and conditions have persisted in spite of medical progress. The prevalence of these conditions has remained fairly constant, but the number of blind children increased sufficiently in recent years because of the abrupt rise of the birth rate.

CSDB -- In-Service Training Program--NATURE OF THE HANDICAP -- BLINDNESS

Education of the Blind

There are three basic methods used in the U. S. for educating the blind. First there is the residential school in which the students live in dormitories or cottages at the school, and attend all grades from kindergarten through high school. Most states have such a school. It has the advantage of being specially organized for such education. They have specially trained teachers, special equipment such as Braille books or large type text books and tangible teaching media aids. For the student there is also the advantage of competing with peers who have the same handicap. The entire program of such a school is geared to the development of a blind child. Such a school has several disadvantages, too, such as having to live in dormitories and being away from home a nine-month period. Also the students live in a sheltered and restricted environment and therefore do not develop the independence needed to live in a seeing world. In such a school his opportunities to take part and be a part of a seeing community are quite limited until after he has graduated from school.

Another method is for the blind student to be integrated in a public school program. In this program he takes part in a classroom of seeing students and then goes to a resource room in which there is a special teacher who has been specially trained in Braille skills, who is able to help him with not only the skills but in locating materials that are in Braille for him to use. The resource teacher is frequently in touch with all of the various classroom teachers and acts as an assistant in cases where the blind child is having trouble with concepts. This system has the advantage of letting the blind student socialize with seeing peers from the time he is very young on. To many this is a greater advantage than attending a school and studying with visually handicapped peers. Another distinct advantage is that the student is able to live in his own home and grow up with his own family. One disadvantage is that if he is not accepted by his seeing peers or his classroom teacher he is apt to experience some severe frustrations. Too frequently the term "integrated" means that the student is only in two or three academic classes and seldom has the opportunity to participate in music or P. E. or shop. Therefore it is only a partially integrated system. Another drawback is that too frequently the resource teacher and classroom teacher are unaware of the severe problem of concepts that are needed by the blind and do not give adequate assistance in this area.

A few states use a combination of the two systems just mentioned. The students will attend the residential school for the first six to eight years and learn their basic skills and so forth and then still live in the residential school and attend the academic classes in some nearby public school. Their P.E. classes, music classes and shop classes are usually attended in the residential school. This type of system lets them become accustomed to working with their seeing peers during their high school years.

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Glaucoma:	Increased pressure inside the eye; "hardening of the eyeball," caused by accumulation of aqueous fluid in the front portion.
Gonorrhea:	A contagious inflammation of the genital mucous membrane (venereal disease) due to infection with the gonococcus organism.
Infectious disease:	A disease caused by pathogenic microorganisms such as bacteria, protozoa or fungi. Diseases included in this category are gonorrhea, measles, meningococcal infection, syphilis, toxoplasmosis, trachoma, tuberculosis.
Iris:	Colored, circular membrane, suspended behind the cornea and immediately in front of the lens. The iris regulates the amount of light entering the eye by changing the size of the pupil.
Keratitis:	Inflammation of the cornea; frequently classified as to type of inflammation and layers of cornea affected as "interstitial" keratitis or "phlyctenular" keratitis.
Lens (Crystalline):	A transparent, colorless body suspended in the front of the eyeball, between the aqueous and vitreous, the function of which is to bring the rays of light to a focus on the retina.
Macula, Macular:	The small area of the retina that surrounds the fovea, a small depression in the retina, and which, with the fovea comprises the area of most acute vision. Synonym: "yellow spot."
Myopia:	Nearsightedness. A refractive error in which, because the eyeball is too long in relation to its focusing power, the point of focus for rays of light from distant objects (parallel light rays) is in front of the retina. Thus, to obtain distinct vision, the object must be brought nearer to take advantage of divergent light rays (those from objects less than twenty feet away.)
Near Vision:	The ability to perceive distinctly objects at normal reading distance, or about 14 inches from the eye.
Neoplasm:	Any new and abnormal growth, such as a tumor.
Ophthalmia Neonatorum:	An acute, purulent conjunctivitis in the newborn; (for control purposes, it is sometimes legally defined as "an inflamed or discharging eye in a newborn baby under two weeks.")

Ophthalmologist or Oculist:	A physician - an M.D. - who specializes in diagnosis and treatment of defects and diseases of the eye, performing surgery when necessary or prescribing other types of treatment, including glasses.
Optic Nerve:	The special nerve of the sense of sight which carries messages from the retina of the brain.
Optic Pathway:	The visual nerve paths from the retina to the cortex of the occipital lobe of the brain.
Optician:	One who grinds lenses, fits them into frames, and adjusts the frames to the wearer.
Optometrist:	A licensed, nonmedical practitioner, who measures refractive errors -- that is, irregularities in the size or shape of the eyeball or surface of the cornea -- and eye muscle disturbances. In his treatment the optometrist uses glasses, prisms, and exercises.
Peripheral Vision:	Ability to perceive the presence, motion or color of objects outside of the direct line of vision.
Prenatal Influence:	Diseases or conditions which have their effect (on the development of the eyes or causing defects) prior to birth, during embryonic life.
Retina:	Innermost coat of the eye, formed of sensitive nerve fibers and connected with the optic nerve.
Retinal Degeneration:	A deterioration of the retina resulting in diminished functioning. This change is often irreversible and usually characterized by a loss of pigment.
Retinitis Pigmentosa:	An hereditary degeneration and atrophy of the retina. There is usually misplaced pigment.
Retinoblastoma:	The most common malignant intraocular tumor of childhood, occurs usually under age five. It is probably always congenital. (Formerly known as glioma.)
Retinopathy:	A noninflammatory disease of the retina. This may be a complication of diabetes or due to disease of the circulatory system.
Retrolental Fibroplasia:	A disease of the retina in which a mass of scar tissue forms in back of the lens of the eye. Both eyes are affected in most cases and it occurs chiefly in infants born prematurely who receive excessive oxygen.

Safety Glasses: Impact resistant; available with or without visual correction for workshop or street wear protection, for both adults and children.

Sclera: The white part of the eye -- a tough covering which, with the cornea, forms the external, protective coat of the eye.

Snellen Chart: Used for testing central visual acuity. It consists of lines of letters, numbers or symbols in graded size drawn to Snellen measurements. Each size is labeled with the distance at which it can be read by the normal eye. Most often used for testing vision at distance of 20 feet.

Sympathetic Ophthalmitis: Inflammation of one eye due to an infection in the other eye.

Syphilis: A contagious venereal disease due to infection with a microorganism, Treponema pallidum. Congenital syphilis is due to an infection acquired from the mother during pregnancy.

Tension, Intraocular: The pressure or tension of the contents of the eyeball.

Tonometer: An instrument for measuring pressure inside the eye.

Trachoma: A form of infectious kerato-conjunctivitis (inflammation of the cornea and conjunctiva.) It is caused by a specific virus which in the chronic form produces severe scarring of the eyelids and cornea.

Uveal Tract: Entire vascular coat of the eyeball. It consists of the iris, ciliary body, and choroid.

Vascular Disease: Diseases of the blood vessels such as arteriosclerosis, heart disease, hypertension.

Visual Acuity (Central): Ability of the eye to perceive the shape of objects in the direct line of vision.

Vitreous: Transparent, colorless mass of soft, gelatinous material filling the eyeball behind the lens.

Unknown to Science: A term used in the etiological classification of causes of blindness for ocular conditions whose exact cause is presently unknown to medical science.

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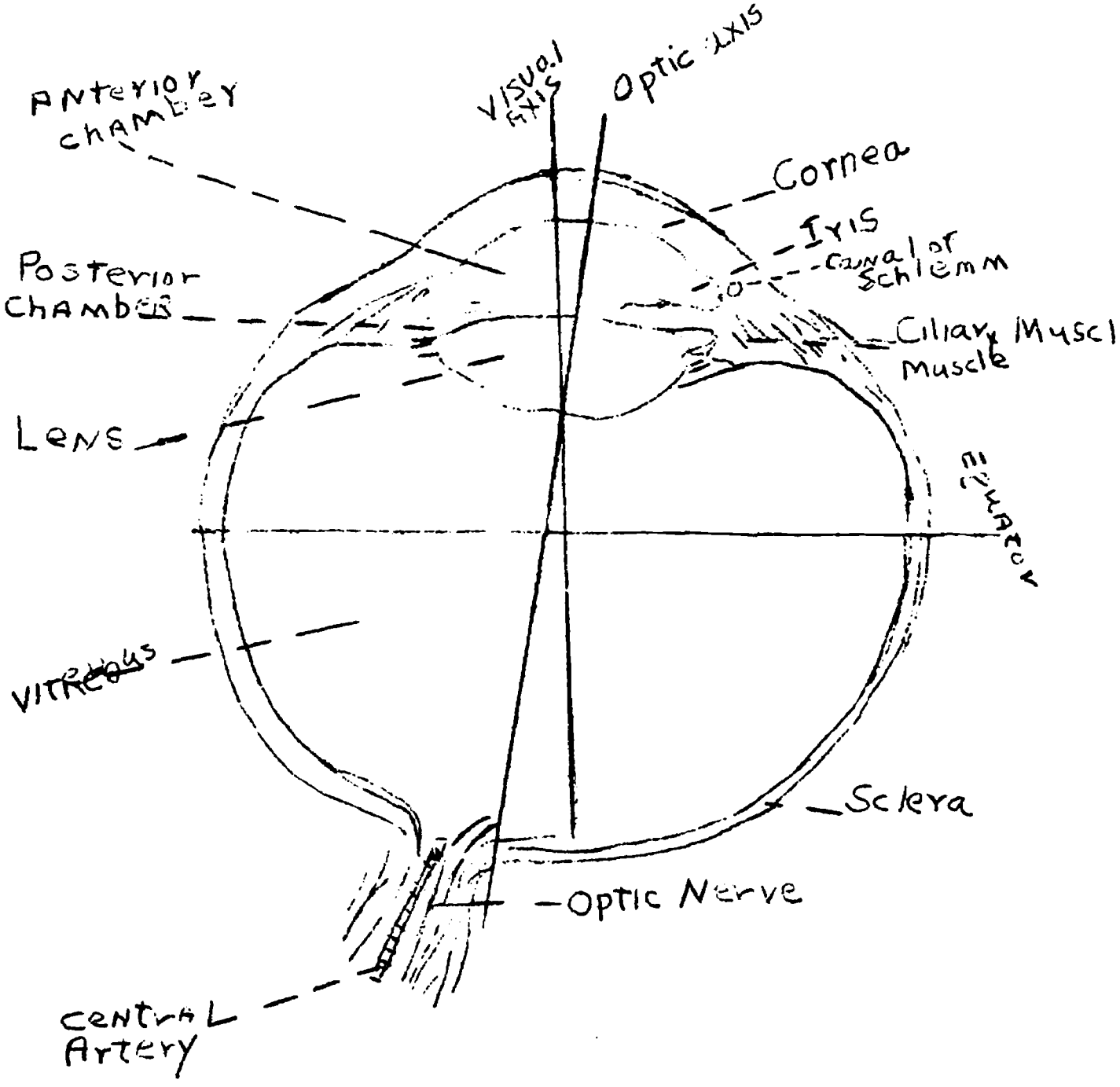
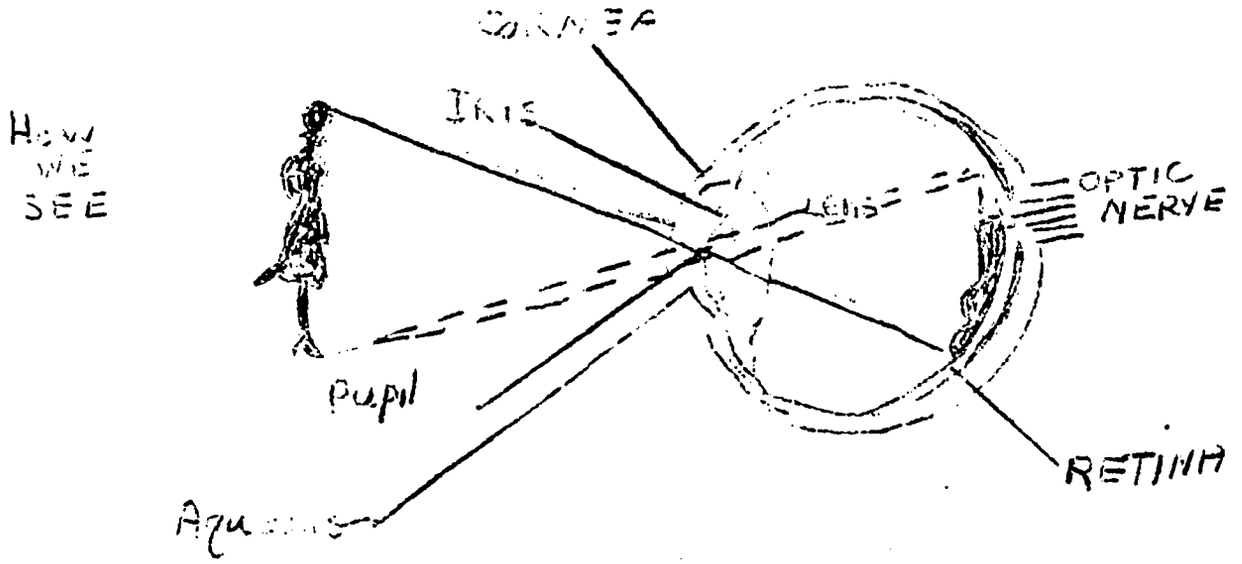
Anatomy of the Eye



How We See

Vision is a function that requires more than the eye alone. In order for the eye to do its job completely, there must also be light to see by and the brain to define what is seen. As light strikes an object -- a girl, for example -- in a person's field of vision, the light rays are reflected from the girl to his eyes. The rays pass through the "cornea" or clear front window, the "aqueous" or watery liquid behind the cornea, the "pupil" or opening in the colored "iris" and the "lens." The lens of the eye bends the light rays as they pass through it, and focuses them on the "retina" or rear inner lining of the eye which contains optic nerve cells. The lens operates much as a camera lens focuses light rays on a film. The retina then relays the light ray image through the "optic nerve" to the brain. Though the image is received upside down because the lens has inverted it, the brain interprets it correctly and the viewer sees the girl right side up. If a person's eyeball is too long and the image in focus falls in front of the retina, he will be nearsighted. If the eyeball is too short and the image falls behind it, he will be farsighted. If the cornea has an imperfect curvature, he will have astigmatism. Properly prescribed eyeglasses or contact lenses are the only means of correcting these visual faults.



CSDB -- In-Service Training Program--NATURE OF THE HANDICAP -- BLINDNESS

Medical Aspects of Blindness

DEFINITIONS

Blindness is generally defined in the United States as visual acuity for distant vision of 20/200 or less in the better eye, with best correction; or visual acuity of more than 20/200 if the widest diameter of field of vision subtends an angle no greater than 20 degrees. (NOTE: a measure of 20/200 visual acuity means that a person can see at a distance no greater than 20 feet while one with "normal" site can see at 200 feet.)

The term "blindness is not synonymous with total blindness. Totally blind means unable to distinguish light from darkness or with no light perception.

The partially seeing are defined as persons with a visual acuity greater than 20/200 but not greater than 20/70 in the better eye after correction. For the most part these persons can function as sighted persons.

Prevalence refers to the total number of cases at a given time in a population, usually the end of a fiscal or calendar year.

Incidence refers to the number of cases that are occurring over a given period of time, usually one year, in a population.

The eyeball as a whole is the site which is second in importance. In this category, glaucoma is first in frequency and myopia, second, for all ages and those 20 and over. For the under five - and 5-19 age groups, other affections of the eyeball, primarily structural anomalies, are the most important.

The site in third place is the lens. In this category, cataract is the most important for all ages. This affection is also the leading cause of blindness.

Affections of the optic nerve, including optic pathway and cortical visual center are fourth in importance as causes of blindness. Optic nerve atrophy is the major affection in this group with about 3/4th of the cases.

Affections of the uveal tract and the cornea fall in fifth and sixth places, respectively. The uveal tract includes the iris, ciliary body and choroid. The leading affection of the cornea is keratitis. Injury is also responsible for many affections of this site.

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NATURE OF THE HANDICAP -- BLINDNESS

History of Blindness, Continued

The last of the "wave" of blind children caused by RLF is just being graduated from high school. A wave of children blinded by the rubella epidemic that crossed the country five or six years ago is now hitting all of the schools across the country. Rubella is caused by the pregnant mother having measles in the third or fourth month and it frequently leaves the child either blind or deaf or both and with many other complications such as heart trouble.

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GUIDEPOSTS TO GROWING AND LEARNING

Children learn to do by doing. You cannot make a child learn anything, but you can help him to be able to learn and to want to learn. No matter what a child does, he is learning. Growth and learning are continuous.

The concept of himself which a child develops may make it possible for him to learn or may hinder or block his ability to learn. If the child's concept of himself is to be one of a self-reliant individual, he needs to feel that he is loved, that he "belongs" and that his successes outweigh his failures. Such security helps him toward the development of a healthy personality.

Each child has many demands and pressures from his cultural environment. These may help or hinder his development of self-confidence. The developmental needs of a child vary with his own stage of development and with the cultural influences bearing on him.

"Guideposts to Growing and Learning, How Do Your Children Grow?" Assn. for Childhood Education International, 1200 Fifteenth St., N.W., Washington 5, D. C., 1959, p. 2.

Recommended Reading:

PRESCHOOL GUIDE
Colorado Association of Future Homemakers of America
510 State Office Building, Denver, Colorado 80203 ($2.50).

CREATING WITH CLAY AND PLAY DOUGH

The use of clay and play dough can be soothing to children and helps to release tension because this material can be pounded, pommelled or rolled. Some children may model simple objects such as balls, snakes or cookies. If a child makes something that he wants to keep, the object can be put aside to dry and harden.

Powder clay can be made by mixing the powder with enough water to make a good working consistency, and should be kept in a closed container.

Play Dough

3 cups flour
1 cup salt
1½ cups water
Food coloring

Add flour or water if necessary to make mixture resilient and spongy. Store in a plastic bag.

Rollers, flat sticks or cookie cutters may be used occasionally, but are not so valuable as direct manipulation.

CREATING WITH PASTE, PAPER, SCISSORS

There are unlimited possibilities as to what children can do with paper, paste and scrap materials. Not all preschool children can use scissors well, but tearing is a good substitute and will strengthen hands.

Homemade Paste

1 cup sugar
1 cup flour
1 teaspoon alum
1 quart water
oil of cloves

Mix dry ingredients, add water, cook until thick, stirring constantly. Cool, add several drops of oil of cloves. Store in covered jars. This produces a pleasant odor which the children enjoy while working.

Children should be shown how to put paste on back of object to be pasted, and how to press it on paper. Materials such as newsprint, construction paper, wall paper samples, cloth, ribbons, cotton, feathers, string, leaves, old material scraps, felt or yarn can be used to create pictures, learn textures and practice manipulation.

FINGER PLAYS

Here are my ears, and here is my nose;

Here are my fingers, and here are my toes;

Here are my eyes, both open wide;

Here is my mouth with my tooth inside.

And my busy tongue that helps me to speak,

Here is my chin, and here are my cheeks,

Here are my hands that help me play,

And my feet that run about all day.

Touch each part of the child as names are mentioned.

My hands upon my head I place

On my shoulders,

On my face,

On my knees, and at my side,

Then behind me they will hide.

Then I raise them up so high

Swiftly let my fingers fly,

Quickly count 1, 2, 3,

And see how quiet they can be.

Suit Action to the words.

A little ball

A larger Ball

A great big ball I see

Now let us count the balls we've made

One, two, three.

Shape ball with thumb and index finger. Shape ball two with both thumbs and index fingers. Shape ball three with arms and hands. Count with fingers on last time.

(1) Two little black birds sitting on a hill,

(2) One named Jack and the other named Jill,

(3) Fly away Jack,

(4) Fly away Jill,

(5) Come back Jack;

(6) Come back Jill.

(7) Two little black birds sitting on a hill.

(8) One named Jack and the other named Jill.

1. Let the two hands closed with thumbs sticking up be Jack and Jill.
2. Show which is which by moving the hands up alternately.
3. Sweep the right hand out from the front and hide behind the back.
4. Sweep the left hand out from the front and hide behind the back.
5. Bring the right hand back in front.
6. Bring the left hand back in front.
7. Hold hands up.
8. Move hands up alternately.

We'll all stand up together

We'll put our hands up high.

We'll give our hands a shake, shake, shake,

And try to reach the sky.

We'll all sit down together.

We'll fold our hands, -- so nice.

We'll make our eyes look straight ahead.

And be as quiet as mice.

I put my arms up high, I put my arms down low

I make my arms quite stiff, and then I let them go

First I swing like this, then I swing like that.

I make my arms quite round, (Tune of Looby-Loo)

And then I make them flat.

WORKING WITH WOOD

This activity provides the fun of making simple objects or of just hammering, sawing, putting together, and sometimes taking apart. It promotes coordination and releases tensions, but should be done with adult supervision.

Use soft scrap lumber, roofing or four-penny box nails, small hammer, screw driver, and small saw. Accessories such as pieces of inner-tube leather and spools are fun to work with.