

IN THE  
UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF KANSAS

ANTHONY AKERS, et al,

Plaintiffs,

vs.

MERLE R. BOLTON, et al,

Defendants

No. 80-1112

AMICUS CURIAE BRIEF  
OF THE  
EPILEPSY FOUNDATION OF AMERICA

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## INTEREST OF AMICUS CURIAE

The Epilepsy Foundation of America is a non-profit corporation founded in 1968 to advance the interests of the two million Americans with epilepsy, through public information and education, research, vocational programs, professional awareness, and advocacy. The Epilepsy Foundation of America has a long-standing interest and commitment to secure the legal rights of persons with epilepsy, and to encourage the development of legal principles based on current medical and psychosocial concepts, rather than on stereotypical prejudices or outmoded ideas about people with seizures.

Since its founding, the Epilepsy Foundation of America has compiled, maintained, published, and periodically updated a comprehensive survey of state laws and administrative policies relating to persons with epilepsy. Through this survey and other legal advocacy efforts, the Epilepsy Foundation of America has sought and attained the reform of state and federal laws, including the repeal of arbitrary laws which prohibited persons with epilepsy from marriage or subjected them to involuntary sterilization.

The legal and social science staff also provides information and assistance to attorneys, legislators, and various organizations working in areas involving epilepsy, through consultation, research, testimony, and serving in the role of amicus curiae. Advocacy activities are designed to facilitate legal reforms, to allow a fuller realization of the individual's civil and legal rights, and to achieve a maximum integration of persons with epilepsy into the mainstream of life.

Epilepsy is a disorder that often evokes stereotyped images and fears despite vast improvements in medical knowledge and treatment of the disorder. Since its inception, the Epilepsy Foundation of America has stood against the stigma and estrangement associated with epilepsy. The Foundation has encouraged society to view the person with epilepsy in a realistic fashion - as an individual who has many capabilities and whose dysfunction is often quite limited in scope and time rather than completely disabling.

At the same time, the Epilepsy Foundation has always recognized that epilepsy and its consequences can have a severe adverse impact on individuals and their families. It is the Foundation's mission to prevent and control epilepsy and its consequences, and to help persons with epilepsy, their families, and other concerned individuals, overcome the problems associated with the disorder.

The purpose of this amicus curiae brief is to present to the court current information on the various types of epilepsy, its treatment, and its consequences to the individual with the condition. In particular, the brief focuses upon the impact epilepsy and its consequences can have on children and their educational performance, and discusses the Foundation's understanding of the role of federal laws mandating a free appropriate education to children handicapped by epilepsy and its consequences in alleviating this impact.

The Epilepsy Foundation of America, through its staff and volunteers, is familiar with the issues being presented in this proceeding, and believes that these issues are of great significance to all persons with epilepsy. The Foundation hopes that the filing of this amicus curiae brief will be helpful to the Court in understanding epilepsy and its consequences.

STATEMENT OF THE CASE

Named Plaintiffs Anthony Akers and Phillip Moore are school age adolescents in Kansas who, according to the Amended Complaint, are entitled to special education and related services under federal and state laws because of their epilepsy. Plaintiffs state that the Defendant School District, School Board, and State Department of Education have failed to provide the services to which these adolescents are entitled under federal and state laws, despite the fact that the Defendants recognized that Plaintiffs have epilepsy and were experiencing problems in school, and despite repeated requests by Plaintiffs' guardians for assistance.

Named Plaintiffs also seek to represent all school age children with epilepsy entitled to special education and related services, alleging that the Defendants have failed to comply generally with their legal duty to identify, evaluate, and provide appropriate special education and related services to all those children who are handicapped and in need of services because of their epilepsy and its consequences.

According to the factual allegations named Plaintiff Anthony Akers, now 18 years old, began experiencing seizure activity in 1969-70, and was diagnosed as having right temporal lobe complex partial seizures in 1971. Since then he has had numerous problems as a result of the seizure disorder, including periods of disorientation, visual difficulties, marked fatigue, inability to accept his epilepsy, poor peer group relations, and an apathetic attitude toward school. Despite the fact that Anthony Akers has normal intelligence, he reads and writes at a 6th grade level. In 1978, his

neurologist and pediatric psychologist recommended that he receive special education services. In their opinion, his attitudinal and behavioral problems could be explained by his seizure condition. The Minnesota Comprehensive Epilepsy Program in 1979 also opined that Akers' educational difficulties could be related to his epilepsy and that he would need special education services to overcome these difficulties. The School District believes, on the other hand, that Akers' difficulties in school are unrelated to his seizure disorder, and that he therefore is not entitled to special education and related services.

The second named Plaintiff, Phillip Moore, is 15 years old. His seizures began in 1978. While he initially experienced tonic-clonic (grand mal) seizures, he has now been diagnosed as also having complex partial seizures. The latter seizures are not currently controlled, despite medication, and cause Moore to lose awareness of his surroundings, become confused and at the conclusion of the seizure he is unable to recall events which occurred during the seizure. Aftereffects, including confusion, are significant. Since seizure onset, Moore's behavior and school performance have deteriorated markedly, and Plaintiffs assert that these problems are caused by the seizures and their consequences. Despite the fact that Moore has requested special education and related services from the school, he was not identified as handicapped and evaluated by the school until the end of 1980, quite some time after his Amended Complaint was originally filed.

Plaintiffs seek injunctive relief on behalf of themselves and the class they seek to represent, and specifically request:



that the School District provide special education to the named Plaintiffs and to all members of the class within the district; that the State insure the screening and identification of all children with epilepsy as to whether they are in need of special education and related services because of epilepsy; that the State insure both the evaluation of Plaintiffs found in need of special education and related services and the provision of an appropriate education program; and that the School District reimburse named Plaintiffs for expenses incurred for independent evaluation, homebound tutor, educational and psychological testing, and counseling.

ARGUMENT

- I. EPILEPSY IS A MEDICAL CONDITION THAT IS VARIED AND COMPLEX; HENCE ALL PERSONS WITH IT ARE NOT AFFECTED SIMILARLY. THE IMPACT ON INDIVIDUALS RUNS THE GAMUT FROM THOSE WHO ARE ABLE TO LIVE NORMAL OR NEAR-NORMAL LIVES, TO THOSE WHO ARE SEVERELY IMPAIRED BY EPILEPSY AND ITS CONSEQUENCES.

INTRODUCTION

One person suddenly blinks her eyes, smacks her lips, fumbles with her clothing, and then resumes what she is doing. Another person stops and stares ahead, as if in a trance, and then continues as if nothing had happened. A third person, without warning, falls to the floor in a violent convulsion.

Each of these individuals has just had a seizure. When people have a tendency to experience seizures (that is, convulsions, brief periods of unconsciousness, or altered behavior) we say they have "epilepsy." Some people prefer to use the term "seizures" or a "seizure disorder," but epilepsy is still the most widely used description of the condition.

It is estimated that at least 2 million Americans have active epilepsy, and that approximately 100,000 new cases develop each year, 75,000 of these in children and adolescents. Prevalence rates, however, are difficult to estimate accurately, for a variety of reasons, and it is recognized that many more Americans may have the disorder.<sup>1</sup>

Epilepsy can take an enormous toll on individuals and families. Studies by the Commission for the Control of Epilepsy and Its Consequences estimated that in 1975 epilepsy cost society approximately 4 billion dollars a year in direct and indirect expenditures. While the majority of persons with epilepsy can control

their seizures with medication, at least 200,000 Americans have seizures more than once a month. Also, many with epilepsy have psychological and behavioral problems that are as much of a handicap as the seizures themselves. The human costs that cannot be measured monetarily include the suffering, rejection, prejudice, fear, and embarrassment persons with epilepsy often experience. The dollar costs include the hundreds spent every year for medical care and medication, the thousands in lost earnings because of an unemployment rate of more than twice the national average, and an under-employment rate of at least that much, the excess mortality rates, and the treatment needs of the severely disabled for continuous or residential care. But, as the National Commission for the Control of Epilepsy and Its Consequences, pointed out in its 1977 Plan for Nationwide Action on Epilepsy:

(a)ny effort to picture the problem of epilepsy in terms of numbers conveys little of its true meaning, which must be understood in human terms. Each... seizure...represents an interruption of the life of an individual - a deviation of function setting that person apart and cutting him off from natural social and vocational contacts. The threat is ever-present - and no one can predict the time or place when a seizure may occur. It is no wonder that so many appear emotionally disturbed. Possibly it is more surprising that a majority do lead normal lives, interrupted only by the occasional episode which they and their associates have learned to take in stride.<sup>2</sup>

A. DESCRIPTION OF THE EPILEPSIES<sup>3</sup>

The term "epilepsy" refers to repeated seizures of any type. Epilepsy is not a disease but is rather

a collection of symptoms which are the outward signs of a temporary malfunction in the brain. The temporary electrical malfunction in the form of a sudden excessive discharge of electrical impulses between cells in a person's brain will cause various distinctive actions and behaviors that are called epileptic seizures. Because the seizures themselves are varied and complex among different individuals, they have more correctly been termed the "epilepsies."

The type of seizure that occurs depends upon the nature and location of the electrical disturbance in the brain. Seizures may be brief and mild, so that they are not even noticeable to another person, or they may produce convulsions and a lapse of consciousness. The range of severity of seizures among individuals is anywhere between these extremes. Seizures may likewise be few or many; they may occur daily, or they may occur years apart. In many cases, seizures stop following effective treatment and do not recur. In some persons, the symptoms of seizures may not be controllable by any means. While epileptic seizures differ in type and the length of time they last, they have certain characteristics in common:

- 1) They have varying degrees of effect on consciousness. In some types of seizures, individuals know that they are experiencing seizures but are powerless to stop them; or the person may be able to hear and respond to other people through action but is unable to communicate while the seizure continues.

Other types of seizures may involve lapses of consciousness so brief the individuals are unaware that a seizure has taken place; there may be altered consciousness in which individuals are unaware of their surroundings while the seizure lasts. Finally, there may be complete unconsciousness for a brief period of time.

2) Seizures are time-limited and their effects do not usually continue to impair action once they are over. They may last a few moments or several minutes. Fortunately, the physiological process that starts a seizure in the first place eventually triggers natural brain mechanisms that inhibit and finally bring the seizure activity to a halt.

3) While not completely predictable, seizures can be sensed approaching by a substantial number of people with epilepsy, who can then use the warning period to move away from hazards, or go to a private place where the seizure can take place without disrupting others. This warning period is known as an "aura," and may take the form of sensations of fear, queasiness, strange smells, sounds or other sensory impressions. While there are many different kinds of auras, as a rule the person will have the same aura each time he or she is about to have a seizure. The length of the aura, and the amount of time between when it occurs and when the seizure occurs will likewise vary according to each individual.

4) Seizure incidence and frequency vary dramatically among individuals. Yet each person tends to establish a pattern of frequency which, after treatment and a period of adjustment to treatment, can reasonably be expected to continue. Someone who has been seizure-free for five years has an excellent statistical chance of continuing to be seizure-free for the next five.<sup>4</sup> A person who has consistently experienced one seizure every three months or so will probably continue to do so unless a more successful medical regimen is discovered.

**B. CAUSES OF SEIZURES**

Isolated seizures do not necessarily mean that a person has epilepsy. A seizure can occur as a result of something external to the brain itself; e.g., seizures may result from low blood sugar (hypoglycemia), or from toxic substances, or from metabolic disorders.

Epileptic seizures (chronic seizures) may be the result of a variety of conditions affecting the brain. These include scarring from head injuries; brain damage through lack of oxygen or ingestion of a toxic agent; tumors; the aftermath of infections involving the brain; certain metabolic disorders; tuberous sclerosis; or a genetic susceptibility in the form of a lowered seizure threshold. In about half of all persons with epilepsy, no underlying cause for the seizure can be found. This is known as "idiopathic" epilepsy. Where

the cause of the seizures is known, it is referred to as "symptomatic" epilepsy.

Epilepsy may develop at any age, but because most cases are diagnosed in persons younger than eighteen, epilepsy is often mistakenly regarded as a childhood condition. Persons over the age of 55 are the second most susceptible age group.

C. SEIZURE TYPES AND CLASSIFICATION

Epilepsy is usually classified by the type of seizure the person has. At one time, seizures were classified according to the names grand mal, petit mal, and psychomotor epilepsy. The traditional idea was that a typical epileptic seizure was a generalized convulsion. We now know that this description is much too limited to fit the modern concept of the disorder, and that so-called grand mal epilepsy is not even the most frequently encountered type of seizure. There are many types of epileptic seizures and variations, and combinations of more than one of these types may occur in the same individual.

Today, the description of seizures as grand mal, petit mal, or psychomotor, has been generally discarded in favor of the International Classification system.<sup>5</sup> In this system, epileptic seizures are divided into two main categories, depending upon the degree to which the whole brain is affected by the seizure activity. Seizures which involve most of the brain are called generalized seizures. Seizures which involve

only a portion of the brain are classified as partial seizures.

Generalized Seizures. The two most common forms of generalized seizures are the generalized tonic-clonic seizure (grand mal), and the absence seizure (petit mal).

The generalized tonic-clonic seizures are the seizures most people think of as epilepsy. The seizure begins with a sudden loss of consciousness, often accompanied by a cry which is caused by a sudden expelling of air from the lungs as the body muscles tighten and the person becomes rigid. The person usually falls during this period. The skin may also turn blue because there is a brief cessation of breathing. This is known as the tonic phase of the seizure, and its duration is usually very brief.

The clonic phase follows immediately, consisting of jerking contractual movements of the major muscle groups (the head, arms and legs). Breathing resumes, but is heavy and irregular, which may cause frothing of saliva. The person may bite his or her tongue or lose bladder control during this period. When the clonic phase ends there will be a gradual return to consciousness. The entire tonic-clonic seizure typically lasts from one to three minutes, although it is possible for it to continue for a longer period of time.

Some confusion and fatigue is common during the period immediately following a generalized tonic-clonic



seizure, but the "aftereffects" of a seizure are highly individualized, and can vary greatly. One person may be able to return to normal activity within a very short time; another person will require a longer rest period.

The second major form of generalized seizure, the absence seizure, consists of brief lapses of consciousness lasting usually from five to thirty seconds. The person may stare blankly and appear to be daydreaming or experience slight movements of the facial muscles, head or arms. There is no effect on muscle tone (and the person therefore does not fall or lose control of his body), and there is no period of confusion afterwards. The person who has had the seizure resumes his or her previous activity, often unaware that a seizure has occurred. Absence seizures are most common in childhood, and they may be as frequent as 50 to 100 a day or may occur only a few times a month. These seizures often disappear in adolescence, but it is also possible for adults to experience absence seizures.

Partial Seizures. Partial seizures involve only a part of the brain and therefore only a specific area of the body or a particular level of consciousness is affected. Partial seizures with simple symptoms produce brief twitching movements of specific muscle groups, such as those controlling the hand, or arm or leg. If the area of the brain affected controls sight, hearing, or another of the senses, brief visual, auditory or other hallucinations are experienced. Consciousness is usually not impaired.

The Jacksonian type of simple partial seizure causes involuntary movements of parts of the body. It begins as a jerking of the finger, then the hand, and later the arm. Similar actions may involve the leg. If the seizure activity continues to spread in the brain, the seizure may become generalized and a tonic-clonic seizure may result. Whether or not the seizure spreads varies with the individual.

Another type of partial seizure is known as a complex partial seizure (psychomotor or temporal lobe epilepsy). Statistically, this is the most common form of epilepsy in adults. During a complex partial seizure a person is either completely unaware of his or her surroundings, or his/her consciousness is substantially impaired. He may feel fear or anger, or distortions in taste, sound or hearing; he may typically go through a series of purposeless motions of which he has no conscious knowledge. These motions are called automatisms, and may take many forms, including lipsmacking, chewing, picking at or trying to remove clothing, aimless wandering, running or cowering in apparent fear. To the onlooker, the person may appear to be conscious but is unresponsive, or inappropriately responsive, to his or her environment. Although a wide range of automatic behavior is possible during a complex partial seizure, each individual develops a distinctive pattern so that, once established, it can be assumed that each subsequent seizure will follow the same form. This type of seizure may last from a

few minutes to several hours, and may be followed by a period of confusion. The seizure may also progress to a generalized seizure, depending upon the individual.

There are other types of seizures, more uncommon than those described above.<sup>6</sup> Myoclonic epilepsy, for example, is one of those rare forms of the disorder that mostly affects very young children. A baby with this condition may look startled or as if he is in pain, and draw his knee: up on his stomach. In another form, the child may drop his head forward and jerk his arms upward. Early recognition and treatment gives the best chance of avoiding the mental retardation often associated with this particular type of epilepsy.

Some individuals experience only one kind of epileptic seizure, but a large percentage of persons with epilepsy experience several different types of seizures. Sometimes the type of seizure may change as a person grows older.

#### D. CONTROLLING SEIZURES

Unfortunately, a cure for epilepsy is not possible with our present state of knowledge. Epilepsy is therefore usually considered a lifelong disorder. It can, however, be controlled. In addition, a number of children do seem to eventually outgrow susceptibility to their seizures.

The major way in which seizures are controlled is through proper diagnosis and the use of anti-convulsant medication. Sixteen anti-epileptic (or anti-convulsant) drugs are currently licensed in the United States, and they have produced

a high degree of reliable seizure control in most persons who have epilepsy. It is estimated that about half of all people with seizures gain complete control of seizures, enabling them to live normal or near-normal lives. Another 30 percent experience a considerable reduction in the number of seizures and about 20 percent find that existing medications do not work for them. Over a long period of time, the prognosis for seizure control is even better. According to the most recent research on "remission" (defined as seizure free for five years), by twenty years after an initial diagnosis of epilepsy, 50 percent of all individuals will be seizure free without medication; 20 percent will be seizure free with medication; and 30 percent will have seizures uncontrolled by medication.<sup>7</sup> The evidence also indicates, however, that the degree of seizure control varies with the seizure type, the age at onset, and the cause of the epilepsy.<sup>8</sup>

Some kinds of anti-convulsants are better for certain seizure types than for others, and no anti-convulsant is effective for all types of seizures. For example, generalized tonic-clonic seizures usually respond well to anti-convulsant medication, and many people with this type of seizure can maintain complete and reliable control. In all forms of epilepsy, the person's response to anti-convulsant medications may range from total control of seizures, to a substantial reduction in the number of seizures, to no improvement with a particular drug.

Physicians work closely with the individual in tailoring the medication regimen to his or her seizure disorder. Because of the nature of epilepsy (and because individuals respond differently to drug therapy) there may be an extended period of time in which different drugs, dosage levels, or combinations of drugs are tried by the doctor in an effort to control the seizures, while at the same time minimizing side effects.

Surgery may be used to treat epilepsy when the condition does not respond to medication and when its cause can be traced to such things as a scar on the brain or a tumor. But surgery will only be used if it can be determined that the scar or tumor is located where it can be safely removed.

Sometimes, particularly in children, after a long period of control, the person may start having seizures again. This usually does not mean that the epilepsy is getting worse, but that because the physical makeup of the person changes as he or she grows older, or because the person's metabolism is changing, medication has to be adjusted.

Like all medication, anti-convulsants can produce unwelcome side effects. For most, these side effects are mild, and may occur only at the beginning of treatment with a new drug. There is no question, however, that anti-convulsant medications will have a "slowing" effect on some children, and physical coordination difficulties or hyperactivity may occur. Once again, the physician will attempt to minimize these side effects by lowering dosage levels or changing to a different type of medication, while at the same time trying to completely control or keep the frequency of seizures low.

- II. UNDERSTANDING EPILEPSY INCLUDES NOT ONLY UNDERSTANDING SEIZURES AND THEIR TREATMENT, BUT ALSO THE SOCIAL AND PSYCHOLOGICAL CONSEQUENCES THAT ACCOMPANY THE MEDICAL CONDITION. FOR MANY PERSONS, THE SOCIAL AND PSYCHOLOGICAL CONSEQUENCES AND PROBLEMS ASSOCIATED WITH EPILEPSY ARE MORE HANDICAPPING THAN THE SEIZURES THEMSELVES.

#### INTRODUCTION

The National Commission for the Control of Epilepsy and Its Consequences stated that the least understood and most neglected aspects of epilepsy were the common social, psychological and behavioral problems that accompanied the condition.

(T)o some degree, every individual affected by epilepsy - adults, children and parents alike - experiences these problems, some merely in coping and adjusting to the fears and uncertainties imposed by epilepsy - for no matter how well-controlled, the fear of seizure is ever-present - some with more severe problems that are effective barriers to employment and social adjustment, and some with obvious psychiatric disorders.<sup>9</sup>

There is often a tendency for the public to assume that, once seizures are controlled by medication, people with epilepsy are "normal" and the behavior problems should disappear. This assumption while accurate for many persons with epilepsy, overlooks the problems created by public attitudes, by the adjustment to epilepsy, and individual differences. It also overlooks the data that presently exist indicating the high percentage of disabilities associated with epilepsy, and the fact that seizure control does not necessarily eliminate those associated impairments.

A. SOCIAL AND PSYCHOLOGICAL CONSEQUENCES OF EPILEPSY

The person with epilepsy is often far less handicapped by seizures than by society's fear and misunderstanding of the disorder.<sup>10</sup> Seizures will rarely restrict a person's activities and capabilities if they occur infrequently, are medication-controlled, are preceded by an aura, occur only at night, or are predictable. Unfortunately, scientific understanding of the complexities of the brain and medical advances in the treatment of epilepsy have outstripped the social reactions to the disorder. Based on the most recent survey of representative adults by the American Institute of Public Opinion (Gallup poll), in 1979 six percent (6%) of American adults still objected to their children associating with people with epilepsy, nine percent (9%) still believed persons with epilepsy should not be employed, three percent (3%) believed that epilepsy was a form of insanity, and one out of five (18 percent) adults would object to a son or daughter marrying a person with epilepsy.<sup>11</sup> Although acceptance of epilepsy has improved considerably since the first public opinion survey was taken in 1949, the stigma of epilepsy remains a social force affecting the lives of persons with the condition.<sup>12</sup>

This stigma extends into legislation. For example, even today two states permit the annulment of adoptions if the adopted child develops epilepsy within five years after the adoption takes place.<sup>13</sup>

There are other very tangible ways in which the life of the person with epilepsy is affected by the condition, even if seizures are well-controlled by medication. The effects, economic and psychological, of a daily medication regimen and frequent doctor visits are, of course, obvious.

All persons with epilepsy have their driver's licenses restricted in some way by the state or federal government. A few jobs, e.g., air line pilot and interstate truck driver, are automatically and completely barred to the person with epilepsy or a history of epilepsy. Obtaining adequate insurance at reasonable rates is a serious problem. Employers are often fearful of hiring the worker with epilepsy, and the individual either has difficulty obtaining employment or loses it quickly once the employer discovers the condition. The result is extremely high unemployment rates, and equally high rates of underemployment in unskilled or semi-skilled jobs. Persons with epilepsy cannot join any branch of the armed services. Parents have been denied custody of a child because of epilepsy. Children have been denied access to recreation facilities because of a fear of their seizure disorder.

Some of the stigma surrounding epilepsy can also be understood if viewed in terms of our commonly held cultural values emphasizing independence, beauty, self-control, health, and perfection.<sup>14</sup> For example, the person with epilepsy may feel dependent because he or she needs daily medications, and frequent doctor visits, and may even periodically need to rely on total strangers for help. Another value of particular importance to the adolescent, beauty or attractiveness, may not be attainable because of seizures. A person simply does not look nice during a seizure, and the knowledge of this can be socially painful, and may even lead to rejection from others.

Perhaps the most disconcerting aspect of epilepsy is the feeling of utter helplessness or lack of self-control a person has during a seizure and its aftermath, an emotion conflicting with our cultural emphasis on self-control. Or



the person with epilepsy may be viewed as "sick" or as having an illness, when in fact he or she may be as healthy as anyone else in all other respects. This is compounded by the evidence of illness presented by the need to take daily medication and make frequent doctor visits. And finally, there is sometimes a feeling that the persons with seizures have something "wrong" with them, or are imperfect or damaged, and if this feeling is conveyed to the person with epilepsy, the condition becomes more burdensome.

Thus, problems of personal adjustment to the condition can occur not only from the stress of dealing with unpredictable seizure episodes, but also from the responses of family friends and the community. The social attitudes and **restrictions outlined above** will affect the person with epilepsy, and may create significant adjustment problems.

In its regional hearings, the Commission for the Control of Epilepsy and its Consequences heard again and again of the difficulties of adjusting to life with epilepsy.<sup>15</sup> Parents told how other parents would not let their children play with a child who has epilepsy, and of children being ostracized at school or excluded from sports. Even within families, severe problems varying from outright rejection of the child to overprotection that restricted individual development were described.

Although many with epilepsy do adjust to their seizure conditions, the psychological and adjustment problems can be severe. One expert told the Commission that from 1/6th to 1/4th of people with epilepsy have psychological problems of varying severity, and that as many as 10 percent may at some time have been admitted to mental hospitals.

B. ASSOCIATED DISABILITIES

Because epilepsy may be a symptom of underlying neurological impairment, it is often associated with other neurological conditions. Major studies on the medical and social prognosis of epilepsy have shown that a high number of persons with seizures have associated disabilities, meaning disabilities not necessarily due to epilepsy but which exist concurrently. Rodin (1976) found that nearly three-quarters of adults with epilepsy had multiple handicaps, including behavior disorders. According to his data, 23 percent of the population studied had epilepsy only; 48 percent also had mental retardation; 54 percent had emotional problems; and 10 percent had other neurological impairments in addition to epilepsy. He also found that these individuals with associated disabilities had significant life adjustment difficulties, unlike the percentage of the population studied that had "epilepsy only," i.e., epilepsy without an associated disability. While these figures are based on a neurology clinic population, which usually includes persons most severely impaired by the condition, these findings appear to be generally supported by other studies. For example, Ounsted (1966) studied 100 cases of temporal lobe epilepsy in children, obtained from physician and clinic records. At that time only 20 percent of those studied had "uncomplicated epilepsy;" eighteen of the children were also mentally retarded, twenty-six were hyperkinetic, and thirty-six were subject to emotional lability. Interestingly, this population was recently re-studied as adults and sixty percent were now making a satisfactory life adjustment. (Lindsay, 1979).

111. LEARNING AND ADJUSTMENT PROBLEMS IN CHILDREN WITH EPILEPSY ARE COMMON, WHETHER DUE TO THE SEIZURES AND THEIR TREATMENT, THE RELATED CONSEQUENCES, OR TO ASSOCIATED MEDICAL AND NEUROLOGICAL CONDITIONS.

Many children will adjust to their seizure disorder rapidly and without significant impact on their school and life performance. This adjustment process is a matter of great individual variability, however, dependent upon many factors, including the type of seizure disorder, response to medication, age at the time of seizure onset, personal and family stability or lack of it, as well as other people's reactions to the disorder. While not all children with epilepsy experience difficulties, learning problems are in fact common, whether due to the seizures themselves or to the associated consequences.

Current estimates of the percentage of children with epilepsy who experience learning and school difficulties range from 33% to 70% (Pond and Bidwell, 1960; Holdsworth and Whitmore, 1974; Whitehouse, 1975). Rodin (1976) found that epilepsy had a severe impact on educational performance. The data he reviewed showed that in the Detroit school system 25% of the children with epilepsy were in special education classes, and 7.4% had been suspended from school. Rutter, Tizard and Whitmore (1970) stated that 18 percent of children with epilepsy over eight years of age are behind in their reading levels by at least two years, irrespective of level of intelligence. These reading difficulties in children with epilepsy have been confirmed in other studies.<sup>16</sup> A teacher questionnaire revealed that children with epilepsy were rated twice as likely to exhibit lack of concentration, irritability, and fidgeting as their classmates. A survey

of Maryland parents of children with epilepsy (Freeman, Gayle, Hendler and Pillas, 1975) found that 50 percent of the parents felt that their children had behavior problems in schools related to seizures, and 90 percent had learning problems because of seizures. A recent survey conducted by the Baltimore Vocational Education Program for Adolescents with Epilepsy revealed that most participants in the program exhibited excessive absences in junior high and high school, and more than 1/3rd had repeated at least one grade prior to entering junior high school, compared to a system-wide average of 13.4 percent. By the time these students had completed their education, more than half had repeated at least one academic grade, a rate four times the system-wide average!<sup>17</sup>

These findings seem to exist in all societies. The Commission for the Control of Epilepsy and Its Consequences reviewed studies showing that among Italian children with epilepsy, one-half had normal adjustment, one third required special education, and an additional 17 percent were failing or depressed. Of 27 children with epilepsy of average or above average intelligence, 24 had chronic depression, 13 severely. In Britain, studies showed that children with epilepsy scored slightly lower than classmates on intelligence tests, and more than one-half had significant adjustment problems compared to 5 percent of their 'normal' classmates and 10 percent of their classmates with physical disorders.

While the fact that significant proportions of children with epilepsy will have school and learning problems is clear, the causes of these difficulties are not, and there will be great variability among individuals both in probable

cause and response. General reasons for learning difficulties have been described as physiological factors associated with a seizure disorder, psychological factors, and the child's social environment. More specific causes of learning problems identified to date include subtle and undiagnosed learning disabilities, inappropriate diagnosis of the seizure condition itself, poor seizure control, medical non-compliance (i.e., not taking medications or following doctor's advice), medication side effects, intellectual limitations, and the psychological and behavioral problems that so often accompany epilepsy.

At least one reason a high rate of learning problems could be expected in children with epilepsy is the large number who have associated disabilities. Rodin's findings on adults with epilepsy and associated disabilities also apply to children with epilepsy. A recent review of data at the Pediatric Seizure Clinic of the Epilepsy Center of Michigan confirmed that more than 3/4ths of the children with epilepsy had associated disabilities. "Epilepsy only" occurred in 22% of the population; 51% had epilepsy associated with intellectual deficits or brain damage, 31% had epilepsy associated with behavior problems, and 11% had epilepsy associated with other neurological handicaps.<sup>18</sup>

The relationship between physiological factors and cognitive functioning problems in children with epilepsy is extremely complex and at present not well understood. In spite of improved modern treatment of seizures, physiological factors may still be present in some persons with epilepsy that affect learning, whether or not the seizures are controlled. These include brain damage underlying the epileptic seizures

and actual injury to the parts of the brain involved in the learning process.<sup>19</sup> For example, certain parts of the brain are important for the control of language: these parts of the brain are also commonly affected by complex partial seizures. Therefore, it is not surprising that children with this type of epilepsy may also have difficulty with cognitive functions.

Indeed, there is evidence that the location of partial seizures and electrical discharges relates to specific types of learning risks.<sup>20</sup> It has also been documented that deficits in attention and concentration can be produced by anti-epileptic medication.<sup>21</sup> In addition, attention deficits may be due to seizure activity that is not controlled by medication, or that may be occurring without any other clinical manifestation.<sup>22</sup>

It is not at all uncommon for children with epilepsy to go for long periods of time before their seizure disorder is accurately diagnosed. In addition, at times an initial incorrect diagnosis of type of epilepsy is made and inappropriate medication or dosage of medication may be given to the child. Until the seizure condition is accurately diagnosed and treated, the child's educational performance may suffer.

Many commenters have attributed the learning problems of children with epilepsy primarily to the social and psychological difficulties associated with epilepsy, and have suggested that this may be a major reason why some children and adolescents with epilepsy may need special education and related services. Certainly the effect this factor can have on learning and performance is well-documented.

Children with epilepsy tend to demonstrate more behavioral and psychological problems than adults. The child is less able to cope with the stress of epilepsy, less likely to understand the strict daily medical regimen and doctor visits, and is more dependent upon others whose attitudes shape his or her personality development and social interactions.<sup>23</sup> It has been demonstrated that seizure conditions beginning in childhood and adolescence are more often associated with personality disorders, problems in getting along with others, aggressive acting out behaviors, and hyperactivity.<sup>24</sup> Some of the common causes of these problems have been identified as: (1) impending feelings of doom that precede a seizure; (2) post-ictal (i.e., post-seizure) awakening to agitated adults surrounding him; (3) daily routine of pills; (4) over-solicitous family; (5) other children acting strangely toward him or her; (6) frequent physician or hospital visits, and interference with a normal school, family, and social program.<sup>25</sup>

The child's experience at school can be crucial in shaping his or her attitudes and adjustment to the disorder. Other children may react with surprise, fear, or revulsion at a seizure. The teacher may be reluctant and fearful to have a child with seizures in his or her class. Indeed the performance of a child with epilepsy in school can depend to a large degree on the attitudes of his or her teachers (Kram, 1963). In terms of academic performers, teachers often equate the child's current performance with basic intelligence, without being aware of the problem of underfunctioning caused by epilepsy (Bagley, 1970). This attitude can lead to self-fulfilling prophecy in the child's

performance. The unawareness of unique needs for students extends to school counselors and other school personnel. Indeed, in one survey, (Martin 1972), twenty to twenty-five percent of school counselors lacked awareness of the social and vocational needs of students with epilepsy.

The failure to understand and address the educational needs of children with epilepsy can have disastrous consequences on their long-term life adjustment. At least one of the factors to which the unemployment and under-employment of adults with epilepsy has been attributed is the poor education the person with epilepsy too often receives. The failure to address the emotional and psychological consequences of epilepsy during the school years only compounds the adjustment problems the individual will have later in life. The individual with epilepsy, who with appropriate assistance and guidance at a young age, could have become a well-adjusted, productive member of society, all too often becomes an adult suffering the feelings of frustration, isolation, and lack of self esteem that many with epilepsy feel.

- IV. FEDERAL LAWS EXIST DESIGNED TO ADDRESS THE EDUCATIONAL DIFFICULTIES THAT MANY CHILDREN EXPERIENCE BECAUSE OF EPILEPSY AND ITS CONSEQUENCES. THE PROPER ENFORCEMENT OF THESE LAWS CAN HELP CHILDREN WITH EPILEPSY OVERCOME THESE EDUCATIONAL DIFFICULTIES, ENABLING THEM TO BECOME PRODUCTIVE ADULT MEMBERS OF SOCIETY.

#### INTRODUCTION

The Commission for the Control of Epilepsy and Its Consequences made numerous recommendations in its 1977 Report to help prevent, control, and alleviate the burdens of epilepsy generally. Among the recommendations the Commission made specifically addressing the needs of children with epilepsy, were many calling for enforcement



of the mandate of the Education for **All** Handicapped Children Act of 1975.

A. EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975

The Education For All Handicapped Children Act, 20 U.S.C. 51401 et seq. (1975) (Pub. L. No. 94-142) was enacted on November 29, 1975 following Congressional findings that "the more than eight million handicapped children in the United States..." were not having their special education needs met. In addition, Congress found that "...more than half of the handicapped children in the United States do not receive appropriate educational services which would enable them to have full equality of opportunity..." The Act was intended

...to assure that all handicapped children have available to them...a free appropriate education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of handicapped children and their parents or guardians are protected... and to assess and assure the effectiveness of efforts to educate handicapped children.<sup>26</sup>

The statute requires that every state and its localities, if they are to continue to receive Federal funds under the Act, make available a free special education and related services for children identified as "handicapped" and in need of services under the Act.

In defining "handicapped children," the statute lists several categories of children including mentally retarded, speech impaired, seriously emotionally disturbed, and other health impaired, who by reason thereof require special education and related services. "Other health impaired" is further defined in regulations<sup>27</sup> as "limited strength, vitality or alertness, due to chronic or acute health problems such as...epilepsy...which adversely affects a child's performance."<sup>28</sup>

"Special education" is defined as "specially designed instruction...to meet the unique needs of a handicapped child.. .." In addition, "related services" is defined as "...developmental, corrective, and other supportive services... as may be required to assist a handicapped child benefit from special education, and includes the early identification and assessment of handicapping conditions in children."29

1. Application of the Act to Children with Epilepsy

The definition of "other health impaired" makes it clear that children with epilepsy are included within the larger category of "handicapped children." It is important to note, however, that their inclusion (as well as that of children fitting into the other covered categories) is qualified by the requirement that, because of their epilepsy, they "require special education and related services." In other words, once a child is identified as having epilepsy, a determination must be made whether his or her epilepsy and its consequences, in fact create a handicapping condition bringing the child within the statute's coverage.

This two-pronged test is especially important for children with epilepsy, since it helps insure that the unique needs of each child with epilepsy are addressed. Many people with epilepsy are not, and do not consider themselves, handicapped, and not all children with epilepsy need or want extra educational services. On the other hand, there are children who are truly handicapped by their seizures and the consequences of having seizures, and who require and are entitled to special education and related services.

If the learning and social problems of children with epilepsy are undetected and uncorrected, they may result in severe handicaps in later years. Since epilepsy is not a visible disorder, except during periodic, often unnoticeable seizures, its presence may remain undetected for many years, often after severe damage has already occurred. Thus, early screening and recognition of seizure disorders is of the utmost importance, and as the Commission stated: "(e)arly recognition is not only essential to prevent the destructive consequences of further seizures, it is also essential to prevent many of the social, psychological, and behavioral problems that can accompany epilepsy."<sup>30</sup>

Children with epilepsy will, therefore, benefit enormously from the proper implementation of P.L. 94-142's requirements for early screening and identification. Each state's annual program plan must detail the policies and procedures being made to insure that "all children who are handicapped, regardless of the severity of their handicap, and who are in need of special education and related services are identified, located and evaluated...."<sup>31</sup> As stated earlier, "related services" "includes the early identification and assessment of handicapping conditions in children."<sup>32</sup> In addition, since the Act requires that a free appropriate public education be available for all handicapped children beginning at age three (except where this would be inconsistent with state law or practice, or with a court order), children with epilepsy may benefit, at an early age, from educational programs tailored to their particular needs. Such special programs for handicapped children at age three were supported by the Commission<sup>33</sup> which recognized that as many as eighty

to ninety percent of all children with epilepsy could attend regular school if they received early treatment and services. Adherence to P.L. 94-142's mandates in this regard would be instrumental in the early diagnosis and, therefore, the possible prevention of learning and social problems in later years.

The requirement of an individualized education plan contained in P.L. 94-142 is particularly suited to the child with epilepsy whose needs and abilities will vary considerably depending upon how soon the seizure is recognized and treated, and also upon the severity of the disorder and its psychological and/or behavioral impact.

It is also important to note P.L. 94-142's requirement that handicapped children be educated in the least restrictive environment. The Act provides that states must establish

procedures to assure that, to the maximum extent appropriate, handicapped children... are educated with children who are not handicapped and that...removal of handicapped children from the regular education environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.. .<sup>34</sup>

The Epilepsy Foundation believes that it is vital whenever possible to keep children with epilepsy in the regular classroom setting. This may benefit both the handicapped and the non-handicapped children in the class. It is important for handicapped children to work, play and learn to live with their handicap, and to develop self confidence and self esteem early in life. As the Commission pointed out, mainstreaming is especially necessary to counteract the social isolation children with epilepsy so often feel. The prior practice of putting children on "homebound" instruction is not the appropriate way to address

the needs of children with epilepsy. It is also important for non-handicapped children to learn about various handicaps, by direct contact with people with those handicaps, and to see that some handicapped children are just like they are, most of the time. This understanding will also lessen the stigma attached to epilepsy, and the problems which frequently develop because of it.

The Commission and the Congress (through the passage of P.L. 94-142) recognized that the primary responsibility for providing the best possible education for handicapped children rests with public school systems. The Commission in particular emphasized the role of local school systems in addressing the needs of children with epilepsy and it made recommendations which, in the Commission's opinion, were also mandated by P.L. 94-142. These recommendations were:

- a. that school systems assure that deficiencies in learning, as a result of either seizures or interictal (i.e., between seizures) deficits that lead to impaired school performance, are assessed and addressed;
- b. that school systems address the specific counseling and psychological/social needs of the child with epilepsy and his family;
- c. that school programs of special education include the assessment and correction of perceptual difficulties of children with epilepsy as part of their regular programs for the handicapped; and
- d. that school systems provide academic achievement evaluations to identify gaps in learning skills that may be due to long-standing but previously undiagnosed epilepsy conditions.<sup>35</sup>

The Commission also recommended that local school systems develop and provide resource teaching programs concerned with the specific educational needs of children with epilepsy in order to raise each child to full learning potential, as in the philosophical mandate of P.L. 94-142.

C. THE REHABILITATION ACT OF 1973 -- SECTION 504

Section 504 of the Rehabilitation Act of 1973, 20 U. S. C. 5794, is a broad civil rights statute which prohibits discrimination against handicapped people by any agency or organization which receives Federal funds. It states that "(n)o otherwise qualified handicapped individual... shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal assistance." The former United States Department of Health, Education, and Welfare issued regulations for the implementation of §504.<sup>36</sup> They require that all public and private groups which receive funds from H.E.W. take specific steps to enable persons with mental, physical or emotional handicaps to learn, work and compete on a fair and equal basis. Noncompliance may result in the termination of federal support to the agency or organization.

There are several basic similarities between P.L. 94-142 and 5504 with regard to education of handicapped children, and children with epilepsy stand to benefit substantially from the interplay between the two laws. In comments submitted concerning the proposed 5504 regulations, the Epilepsy Foundation expressed the view that the "substantive and procedural rights of handicapped children outlined in P.L. 94-142 should be reflected in the regulations implementing Section 504." In addition, it was suggested that "regulations promulgated under Section 504 should rely on the formulation of principles set forth in P.L. 94-142 as a satisfactory statement on discrimination in the area of elementary and secondary education."<sup>37</sup>

In evaluating a handicapped child's needs, procedures must be designed to insure proper classification and education placement. In order to carry out this requirement, the regulations require that public schools take steps, on an annual basis, to identify and locate handicapped children who are not receiving a public education, and to publicize to them and their parents the rights and duties established by 5504 and its regulations.<sup>38</sup>

The regulations also require that handicapped students be educated with non-handicapped students to the maximum extent appropriate to the handicapped students' needs. A handicapped person must be placed "in the regular educational environment...unless it is demonstrated by the recipient that the education of the person in the regular environment with the use of supplementary aids and services cannot be achieved satisfactorily."<sup>39</sup>

As discussed with respect to P.L. 94-142, the social, psychological and consequent learning problems often suffered by children with epilepsy may be alleviated, to a large degree, by placing children with epilepsy in a learning environment with non-handicapped children.

There are also important differences between the two statutes, perhaps the most important of which is their ranges of coverage. In contrast to P.L. 94-142's list of specific handicapping conditions which may warrant special education and related services, §504's coverage is quite broad. In order to be protected under §504, a person must be handicapped, and must be qualified to be employed in, benefit from, or participate in federally assisted programs or activities.

"Handicapped person" is also broadly defined, and includes "any person who (i) has a physical or mental impairment which substantially limits one or more major life activities, (ii) has a record of such an impairment, or (iii) is regarded as having such an impairment."<sup>40</sup> "Physical or mental impairment" includes epilepsy.<sup>41</sup>

The recognition that a person may be handicapped by being "regarded as having" a covered impairment is of particular importance to persons with epilepsy. "Is regarded as having an impairment" is defined to include someone who "has a physical or mental impairment that substantially limits major life activities only as a result of the attitudes of others toward such an impairment...."<sup>42</sup> As discussed above, the stigma associated with epilepsy often poses more of a handicap than does the condition itself. In addition, as the Epilepsy Foundation stated in its comments on the proposed §504 regulations, "many people with epilepsy are often not considered to be handicapped by people in a position to provide services or prevent discrimination." Since "(e)pilepsy is usually not a highly visible handicap" the person with epilepsy "often does not receive the same assistance as an individual with a more noticeable handicap."<sup>43</sup> It is significant, therefore, that under 504, a child with epilepsy may be entitled to a free appropriate public education if his or her learning is limited solely by the negative connotations associated with epilepsy.

Due to §504's broad coverage, a child may be entitled to a free appropriate public education even though he or she might not be entitled to such services under P.L. 94-142.



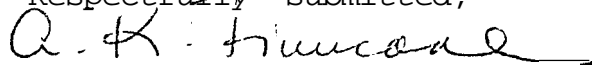
If a child's epilepsy substantially limits his or her learning, or if the child has a record of or is regarded as having epilepsy, the child is protected under 9504 regardless of whether the student is eligible for special education and related services as defined by P.L. 94-142. For this reason, depending upon the facts of the particular case, a child with epilepsy may be entitled to services under one or both of these statutes.

#### CONCLUSION

Epilepsy is a disturbance in the normal pattern of the electrical activity of the brain. What this electrical disturbance is caused by, and how it affects the individual varies greatly. For many children with the condition, epilepsy and its consequences will have no effect on their learning and educational performance. The range of intelligence among children with epilepsy is roughly the same as for the rest of the population. Nevertheless, a substantial proportion of children with epilepsy will experience learning problems. These problems may be the result of the seizures themselves or of common problems associated with seizures. The reasons for learning problems are myriad and still poorly understood; those identified to date include subtle and undiagnosed learning disabilities, and/or gaps in learning skills, psychological and behavioral problems that often accompany the condition, mild or severe retardation, long-standing undiagnosed, inaccurately diagnosed and treated seizure activity, over- and under-medication, and the side effects of medication.

Until the problems associated with epilepsy are recognized and corrected, the maximum potential of the individual cannot be attained. It is the Epilepsy Foundation's position that those children and adolescents with epilepsy who are experiencing problems in school have the right to a free and appropriate education in the least restrictive environment as mandated by federal and state laws and regulations. The full and proper enforcement of these laws can help assure that children and adolescents experiencing problems because of epilepsy are **assisted** to help them become fully productive members of our society.

Respectfully—submitted,



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END NOTES

1. Commission for the Control of Epilepsy and Its Consequences, U. S. Department of Health, Education and Welfare, Plan for Nationwide Action on Epilepsy, Volume I at 18-20. (DHEW Publication No. (NIH) 78-279) (1977). See also, Epilepsy Foundation of America, "Incidence and Prevalence of Epilepsy," Introduction to the Basic Statistics on the Epilepsies, 1978.
2. Commission's Report, Volume I, at 26, supra.
3. The medical information contained in this part has been compiled by the Epilepsy Foundation of America for a lay audience, and is current through 1980. Additional sources of information and background material on epilepsy for a variety of audiences can be obtained by phoning or writing The Epilepsy Foundation of America, Suite 406, 1828 L Street, N. W., Washington, D. C. 20036 (202) 293-2930.
4. Annegers, Hauser, and Elveback, Remission of Seizures and Relapse in Patients with Epilepsy, 20 EPILEPSIA 729 (1970).
5. Gastaut, H., Clinical and Electroencephalographical Classification of Epileptic Seizures, 11 EPILEPSIA 113 (1970). The classification system is set out below.

I. Partial Seizures (seizures beginning locally)

A. Partial seizures with elementary symptomatology (generally without impairment of consciousness)

1. With motor symptoms (includes Jacksonian seizures)
2. With special sensory or somatosensory symptoms
3. With autonomic symptoms
4. Compound forms

B. Partial seizures with complex symptomatology (generally with impairment of consciousness) (temporal lobe or psychomotor seizures)

1. With impairment of consciousness only
2. With cognitive symptomatology
3. With affective symptomatology
4. With "psychosensory" symptomatology
5. With "psychomotor" symptomatology
6. Compound forms

C. Partial seizures secondarily generalized

II. Generalized Seizures (bilaterally symmetrical and without local onset)

1. Absence (petit mal)
2. Bilateral massive epileptic myoclonus
3. Infantile spasms
4. Clonic seizures

5. Tonic seizures
6. Tonic-clonic seizures (grand mal)
7. Atonic seizures
8. Akinetic seizures

III. Unilateral Seizures (or predominantly)

IV. Unclassified Epileptic Seizures (due to incomplete data)

6. Id.
7. Annegers, Hauser, and Elveback, supra at 731.
8. Id. at 732
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11. Caveness, W. F., and Gallup, G. H., Jr., A Survey of Public Attitudes Toward Epilepsy in 1979 with an Indication of Trends Over the Past Thirty Years, 21 EPILEPSIA 509 (Oct. 1980).
12. Gallup, Introduction, supra, note 10. ~~But see~~, Ryan, Kempner and Emlen, The Stigma of Epilepsy as a Self-concept, 21 EPILEPSIA 433 (1980).
13. Those states are Arkansas and Missouri. Epilepsy Foundation of America, The Legal Rights of Persons with Epilepsy, 1976 edition.
14. University of Minnesota Comprehensive Epilepsy Program, Epilepsy and the School Age Child, 1977.
15. Commission's Report, Volume I, supra at 75.
16. See, e.g., Stores and Hart, Reading Skills in School Children with Generalized or Focal Epilepsy, 18 DEV. MED. CHILD NEUROL. 705 (1976); Bagley, The Educational Performance of Children with Epilepsy, 40 BRITISH J. EDUC. PSYCHOLOGY 82 (1970).
17. Vocational Education Program for Adolescents with Epilepsy (VEPAE), data from December 1980 survey.
18. Letter from Ernst A. Rodin, M.D., Medical Director, Epilepsy Center of Michigan to the Epilepsy Foundation of America, dated February 4, 1980.
19. Epilepsy Foundation of America, Basic Statistics on the Epilepsies, at 81 (1975). See also Svoboda, Learning About Epilepsy, at 188 (1979) (University Park Press: Baltimore, Maryland).
20. Svoboda, supra at 191.
21. Basic Statistics, supra at 81. ~~See also~~, Stores, Behavioral Effects of Antiepileptic Drugs, 17 DEV. MED. CHILD NEUROL. 647 (1975).

22. Basic Statistics, supra at 81. ~~See also~~, Baird, et. al, Neurometric Evaluation of Epileptic Children Who Do Well and Poorly in School, 48 ELECTRO. CLINIC NEUROPHYSIOLOGY 683 (1979). Attention difficulties in children with epilepsy are commonly reported. See Stores, Hart, and Piran, Inattentiveness in Schoolchildren with Epilepsy, 19 EPILEPSIA 169 (1978).
23. Svoboda, supra at 158.
24. Id., at 157-158. See also, Hermann, et al, Psychopathology in Epilepsy: Relationship of Seizure Type to Age at Onset, 21 EPILEPSIA 15, at 16 (1980), citing studies indicating relationship of personality and adjustment problems to age at onset.
25. Basic Statistics, supra at 81.
26. 20 U.S.C. §1401 note.
27. 42 Fed. Reg. 42474 (Aug. 23, 1977).
28. 45 C.F.R. §121a.5(b) (7).
29. 45 C.F.R. §§121a.14 (a) (1), 121a.13 (a).
30. Commission's Report, Volume I, supra at 39.
31. 20 U.S.C. §1412(2) (c).
32. 20 U.S.C. §1401(17).
33. Commission's Report, Volume I, supra at 86.
34. 20 U.S.C. §1412.
35. Commission's Report, Volume I, supra at 88-89.
36. 45 C.F.R. §84, originally published at 42 Fed. Reg. 22676 (1977).
37. Comments submitted to Mr. Martin Gerry, Director, Office of Civil Rights, Department of Health, Education, and Welfare, on "The Notice of Intent to Issue Proposed Regulations on Section 504," by Mr. Jack McAllister, Executive Director, Epilepsy Foundation of America (June 11, 1976).
38. 45 C.F.R. §§84.35,-.32.
39. Id. at §84.34(a).
40. Id. at 84.3(j).
41. Id. at §84.3(j) (2) (i) and App. A, Subpart A-3.
42. Id. at §84.3(j) (2) (iv)(B).
43. EFA comments on Section 504, supra.

CERTIFICATE OF SERVICE

THIS IS TO CERTIFY that a true and correct copy  
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