Recognition of MBD Benefit or burden?†

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MBD is not a disorder of a season, but a lifelong handicap. (P.J. Accardo, 1980)

WHAT IS MBD?

Children with MBD, minimal brain dysfunction, look no different from ordinary children. Their intellectual capacity is within normal limits.

The handicap is caused by a brain injury which is usually so slight that even a physician will not detect anything abnormal at routine investigations.

Ordinarily it is only after careful and detailed neurodevelopmental examinations have been performed that the dysfunction is observed.

The word "minimal" in MBD means that the injury itself is small. It is a disturbance in some of the brain's smallest structures. However, the effects that the disturbance can have on the child's behaviour and the school achievement are seldom minimal. If the handicap is not diagnosed and treated at an early age the consequences can be disastrous for the child. He might have great difficulty in adjusting to society due to behavioural problems and inability to keep up in his schooling and vocational training.

There have always been MBD children, but they have gone unrecognized earlier. They have been called wicked, lazy, stupid,

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silly, thankless, scatter-brained, etc. Not until 1948 was it propounded that types of brain damage exist which do not cause severe mental or motor handicaps, but rather cause changes in behaviour and perceptual ability.

The term MBD was introduced in the 1960s. Knowledge of the existence of children with MBD spread very slowly, even among health personnel. Physicians, and especially family doctors, who should have been caring for these children at an early age usually had no instruction in the proper examination methods or the age at which an adequate diagnosis could be made.

There do not exist any unambiguous and detailed descriptions indicating when it is justifiable to speak of MBD. It has even been suggested that the term should not be used at all since there is no uniform disease with similar symptoms. All MBD children behave differently depending on the localisation and extent of the injury.

Use of the term MBD is indicated, however, to emphasise that the child's symptoms are caused by an organic lesion in contradistinction to purely behavioural or psychosocial disturbances. On the other hand, when the individual is concerned, a detailed description of the various symptoms of every MBD child is required to form an exact idea of the handicap.

In 1966, Clements used the term MBD for children of "near average, average or above average intellectual capacity with certain learning and/or behavioural disabilities ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception, conceptualisation, language, memory and control of attention, impulse or motor function."

The child with MBD thus has deviations concomitantly in many different activities, such as motor performance, learning, perception, behaviour and language skills. A child with solely behavioural problems does not have MBD. If in addition to behavioural problems he† has motor disturbances and learning disability, the diagnosis is very likely MBD.

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†For simplicity, the male pronoun is used throughout the text. In fact, the incidence of MBD is higher among boys than girls

MOTOR DISTURBANCES

The motor disabilities of the MBD child affect both his gross and his fine motor performances.

He is often clumsy and slow in his movements. The graceful fluidity of movement that is usually characteristic of children is absent in MBD. They run badly, stumble over their own feet and find it difficult to stop suddenly or change direction of their movements. They find it hard to learn to ride a bicycle, ski or skate.

Disturbances of the fine motor performance interfere with manipulative tasks, such as drawing and writing, doing jig-saw puzzles or threading a string of beads. The child might have difficulties in dressing, especially in doing up his buttons or tying his shoelaces. The impaired fine motor performance can be pervasive or affect only a single task. The child may, for instance, use a needle quite well, but have difficulties with the jig-saw puzzle.

PERCEPTION

Perceptual difficulties imply disturbances in tasks which are dependent on our five senses, viz. vision, hearing, smell, taste and touch. Even if the senses are normal and the child both sees and hears well, he cannot coordinate the impressions imparted by the senses and interpret them as a meaningful entity. If his visual perception is impaired, he fails to distinguish shapes from one another. He does not notice if letters, syllables or words are written backwards or in the wrong order. He finds it difficult to estimate distances and to localise objects in space. He may perceive two cars in the street as a small car and a big car without understanding that the small car is more distant from him. Hence, he is more prone to traffic accidents than other children.

The disturbances can also apply to auditory perception. The MBD child can find it difficult to comprehend the context of different kinds of sounds and arrange them in a meaningful whole with structures and intervals. At school, he may because of all the background noises find it difficult to hear what the teacher is saying and even more difficult to understand the meaning of the words.

The MBD child finds it easier to catch the meaning of the message if he stands close to the teacher and looks directly into her eyes. Much of the over-activity in classroom situation can be due to inability to understand and arrange spoken sounds. The MBD child then becomes idle, which trends to make him restless and a disturbance to others.

Dictation is a nightmare for the MBD child. Of course writing is difficult when he cannot distinguish between the sounds o and u, or a, i and y, or b, p, t and d. He also has trouble in understanding the order of syllables in a word and of words in a sentence.

The tiniest stimuli can annoy the MBD child, as auditory and visual stimuli but also smells and tastes which he experiences intensively and differently from other children. His sense of touch can also be intense which can lead to aggressive behaviour if another child happens to bump into him.

Children with MBD can have a disturbed body image. They cannot point to the parts of the body, distinguish right from left, up from down. These are concepts that affect comprehension of the body in relation to the environment. In trying to take a glass of milk he finds it difficult to estimate the distance and knocks the glass over long before he thought his hand was anywhere near it. His arm and his whole body are bigger than in his imagination. As his physical strength grows, friends, siblings and pets can be given little pinches which are considerably stronger than he intended to give.

LEARNING DIFFICULTIES

Difficulties in learning appear seldom before school age. They might have a connection with perceptual difficulties. Acquiring the skills of reading and writing is difficult when the perception of voice and ability to combine sounds with letters and words are impaired. The child does not know which way round to place the letters or in what order. If he has learned the letters he might have difficulties in building them into words and understanding the meaning of sentences. Long multiplication and division tasks can equally well create problems.

Poor concentration aggravates the learning difficulties. If the child's memory is impaired, he soon forgets what he has been taught. He may very well remember some unimportant detail but forget the essential. He might recall the colour of the teacher's dress, but totally forget the homework he has been set for the next day.

BEHAVIOURAL PROBLEMS

The MBD child's behaviour is closely linked to his chronological age. Some of his behavioural disturbances might be due primarily to the brain damage. Most will have developed later as a result of his bitter experience of repeated failures, of always being "bottom of the class". The older he grows, the more dominating are the secondary disturbances.

The most disturbing behavioural problem is usually hyperactivity. The child finds it difficult to sit still, he runs around anxiously, touches everything, and breaks—often unintentionally—his own and other children's toys. He is easily annoyed by the slightest stimuli, has outbursts of high temper and might become aggressive.

Most often liveliness and restlessness are associated with MBD. But there are MBD children who are calm and even passive.

The MBD child is often regarded as nasty and impossible. But his behaviour can be due to a lack of understanding of what he may and may not do.

He has a ready tendency to tire when doing something that required thought. The child's inattentiveness varies considerably from day to day, hour to hour, which annoys his teachers as they do not know what he has really learned.

MBD children can seldom foresee the possible consequences of their behaviour and be apt to say or do something that is tactless or antisocial.

The MBD children are quick to say no to all that is new and unfamiliar. They are often discontent, constantly wanting something more, better, bigger and more expensive.

Most of them do not always behave badly. They can be

bothersome for only a little time, while at other times they can be just like other nice children, tender, kind and well behaved.

SPEECH PROBLEMS

The child with MBD is often late in learning to speak. Errors of articulation are common and he may even be unintelligible. He cannot find words or arrange them in the right order. He often speaks loudly, shrieks. Occasionally the strain on his vocal cords of loud and lengthy talking makes him rather hoarse.

HOW MANY MBD CHILDREN ARE THERE?

Definitions of MBD differ from country to country, leading to the assumption that there are relatively more of these children in one country than in another. Estimates of the occurrence of MBD have ranged from 1–2% right up 15–20%.

The great variation in the estimates of the frequency of MBD children arises mainly from the lack of a uniform and clear definition of what really can be called MBD. An estimate of about 1.5% more severely handicapped and 3.5–4.5% with milder forms of MBD can be near the mark where an organic cause is verified or considered likely.

We have no definite knowledge either of the ratios of severely and mildly affected children. What is evident is that the symptoms of MBD children show great individual variation. These differences are not only due to the localisation and extent of the brain damage but also to a considerable extent due to the basic hereditary properties in the child with MBD.

WHAT CAUSES MBD?

All the causal factors of MBD are not known. There are many indications that disturbances during pregnancy or delivery or diseases in the newborn infant are responsible for the dysfunction.

MBD is about six to eight times more common in boys than in

girls. Hereditary reasons have been propounded to explain the great numerical difference between the sexes. But the reason can also be that boys are more sensitive to minimal brain damage during pregnancy, delivery or the neonatal period.

WHO MAKES THE DIAGNOSIS?

The parents of the MBD child are often the first to suspect that there is something odd about him. His motor development may be delayed. He can be clumsy and very late in starting to walk. His speech development may be delayed. The parents can be anxious also because the child is troublesome and aggressive.

It can unfortunately be a long time before the parents' suspicions are confirmed. The child looks quite normal. The physician finds nothing abnormal in his routine investigations. He might soothe the parents' anxiety by saying: "Take it easy, it'll be better in time." It is most often true that the symptoms do become less worrying as the years pass and can even cease to attract attention. But parents who are really worried about their child's behaviour do consult the doctor in a situation when they actually need help. To be shrugged off with the remark that everything will be fine sometime in the undefined future is small solace for a family that is in despair because of the child's behaviour.

The diagnosis of MBD is the job of specialists in several branches. Essential members of the team are the pediatrician or pediatric neurologist and the child psychologist. But the team might also comprise a child psychiatrist, speech therapist, social worker, physiotherapist and the child's pre-school and school teacher.

In the absence of experts, there can be both over- and under-diagnosis of the symptoms. If MBD is not detected, the child's behaviour will be attributed to the home milieu and lack of upbringing. On the other hand, the child might be classified as MBD although the symptoms are caused not by brain damage but by psychic or social conditions.

For a diagnosis of MBD an organic cause must always be verified or thought to exist with great probability.

That parents of a MBD child often take the diagnosis of MBD as a relief points more than anything else to the fact that the diagnosis has been made far too late. The parents have been worried about the child's behaviour for a long time. They have suspected for years that all is not as it ought to be. The child's behaviour may have resulted in discord between the parents and arguments about how the child should be brought up. The mother may well have had to face most of the criticism. In such circumstance, it is natural that confirmation of an organic injury comes as a relief. The parents realise that the blame for the child's behaviour does not lie at their door and is not due to faulty upbringing.

Much of all this distress could have been avoided had the diagnosis been made earlier. The main reason why many children have to wait so long for diagnosis is the lack of detailed knowledge of MBD among health personnel.

HOW DOES MBD MANIFEST ITSELF?

The MBD child's symptoms depend on the localisation and extent of the brain injury. The behaviour of each individual MBD child is different from that of any other MBD child.

In severely handicapped MBD children with pronounced symptoms the difference in behaviour is relatively readily observable. The diagnosis is considerably more difficult to verify when the MBD symptoms are slight. For instance, when a child is unusually lively it is hard to judge whether his behaviour is definitely abnormal or whether he is a normal healthy but somewhat mercurial child.

The MBD symptoms vary with the age of the child. Thus it is impossible to define what is abnormal before the age-related symptoms and developmental milestones are established for ordinary healthy children. The variations in normal development must also be borne in mind. For example, children usually begin to walk at one year of age. If a child has not begun to walk by the time he is one and a half years old, it is essential to discover for certain if this is within normal limits or if it is definitely abnormal. Should a four five-year old child be able to hop on one foot? When do children usually learn to skate and ride a bicycle? At what age should

children be able to feed themselves, tie their shoe-laces, do up their buttons? If a child of five cannot write his name, that can be accepted, but if he still cannot do it at eight that might indicate retarded development.

The behaviour of an MBD child can therefore only be described in broad outline. Much of it can be normal variation for the age. Hence, it is extremely important to know that the MBD child often has an accumulation of several different symptoms which, however, vary with the individual.

INFANCY AND EARLY PLAY PERIOD

It is difficult, often even impossible, for a physician to diagnose MBD in infants and very young children. Skills which are disturbed in the MBD child have still not developed at this age and so of course cannot be tested, such as poor fine motor performance, coordination of movements, perception and learning difficulties.

While it ordinarily is not possible to diagnose MBD at an early age, there can be symptoms which are indicative of dysfunction. The child can have disturbed sleep and cry at night. Eating problems and colic are common. But these signs are by no means diagnostic, for healthy infants, too, can be restless and cry during the night for months.

The MBD child can be late in his motor development, in learning to sit and stand, and may start walking later than other children usually do. He spills his food, has trouble learning to feed himself and to drink from a cup.

He can be late in learning to speak and when he finally does talk he might experience difficulties in articulating, finding words and forming sentences.

The development of children varies considerably at this age so it is often very difficult to decide what is normal and what is definitely abnormal.

PLAY PERIOD

At the age of three-four years already, deviations in the performance of many abilities are more easily perceivable. The MBD child

is often clumsy and stumbles frequently. He finds it difficult to learn to ride a bicycle and to keep his balance on roller skates. He tips over his glass of juice or milk at birthday parties and cannot understand why he is scolded because in his own opinion he has not done anything wrong.

Hyperactivity is often the most conspicuous and the most disturbing symptom at pre-school age. The behaviour of the most lively MBD children can often be recorded as abnormal after watching them at play. They dart from one activity to another, stay with one thing for a brief while only and seldom finish what they have started.

A less disturbed MBD child is often harder to detect on the evidence of liveliness alone.

The MBD child can hardly bear disappointments, which might explain why he often says no to suggested new activities without even trying them. Changes in the daily routine or a new environment can bring on panic-stricken outbursts.

The MBD child can be aggressive. His impulsive behaviour leads him suddenly to throw stones or toys at his playmates. He breaks toys and spoils games. Neighbourhood parents can forbid their children to play with a hopeless and aggressive MBD child or invite him home.

The child's stubbornness and insatiable craving for attention make him tiring. Indeed, he must be watched, for he has no sense of fear. He will hang out of windows and climb onto high roofs. He runs away from home and can even jump on a bus or train and finish up far away from home.

The MBD child in the kindergarten cannot manage many of the activities that are usually considered routine for the age. He cannot sit still and listen to stories, cannot draw, cannot clip out pictures with scissors, thread beads, saw or model. He has difficulty in learning the words of songs or the rules of games and hence cannot join in group activities.

He clings to the kindergarten teacher's skirts and demands constant attention. If the teacher has not got the time or is too tired to listen to the child, he can suddenly develop a horrible stomach

ache. This brings him consolation and attention, he is hugged and looked after—exactly what he was longing for.

The MBD child is so clumsy and slow that he seldom finishes his tasks and the preschool teacher has not got the time to wait for him. The child is also incapable of doing the same thing for a longer time.

Some MBD children begin to show by this age already a measure of perseverance, a repetition of tasks. If they begin with something, they cannot stop and continue again and again to repeat the same task. If they are drawing a circle on paper, the paper will soon be full of circles, and then the desk top, the floor and the walls.

When the time for outdoor play comes, the MBD child has difficulty in dressing himself, he does not know front from back, left from right, up from down, and finds it hard to fasten his buttons. Dressing takes a long time and usually requires help of a grown-up.

It may happen that there comes a time when the teacher cannot stand the situation any longer and gets in touch with the parents. If the child has not been recognised as handicapped, his negative behaviour might be attributed to his readiness to quarrel or to his bad upbringing.

It can still be difficult to diagnose MBD at pre-school age. It can be hard to get the child to cooperate in the examinations. The physician who persists in trying to make a clinical examination can be struck or bitten, or the child might just run screaming into the waiting room. The same situation can arise with the psychologist or child psychiatrist.

However, there are different ways of cooperating with children and many different investigation systems. It should not be impossible to arrive at a diagnosis of MBD when the child is four to five year old.

SCHOOL AGE

It is at school age that the MBD child's handicap is often most apparent and most difficult for the child to come to terms with.

School is most frequently the environment where the MBD child

for first time in his life faces requirements which he cannot meet. He should be able to sit still and listen to the teacher. He must learn to read, write and count, learn by heart, understand symbols and abstract conceptions, coordinate his movements in gymnastics, and a great deal more.

He is set tasks which he has no possibility of completing. He feels that he always is the worst, slowest, most quarrelsome and most impossible.

There may well be both parents and teachers who know no better than to ask the child: "Why are you so lazy?" or "You could certainly do this if you only bothered to try". Adults in these situations have not really understood that the child actually has tried, again and again, and in spite of this has always failed.

The subject who can never assert himself and always fails begins to despair and loses his self-confidence. He might ultimately simply stop trying. He avoids tasks in which he might fail, refuses to read aloud in front of the class, or stays at home with a headache on the days when there is a gymnastics lesson at school.

The MBD child often has wretched handwriting and usually fails to finish the writing lessons. The result of his work does not match his intellectual capacity or the amount of work he has put into the exercise. He gets a feeling of being unfairly treated as he always fails even when he really tries. His self-confidence declines and all feelings and ambitions disappear. The psychic symptoms increase steadily and can finally totally dominate the picture of the disorder. If the handicap is not diagnosed, the behavioural problems can even mask the organic background of the MBD.

The MBD child's ability to concentrate is often impaired. Even negligible stimuli distract him, and this influences his capacity for learning. He has a reading and writing disability, does not understand symbols, forms and abstract conceptions. He might have difficulty in understanding why when the distance between New York and Chicago is only two inches on the map it takes a whole day's travel to cover the distance between the two cities.

If the teacher does not know that the child is handicapped she can ask too much or too little of him. She might expect results which because of the MBD child's delayed maturation he cannot

possibly achieve. On the other hand, the child might be simply sidelined because his teacher assumes that he knows nothing and has not the capacity to learn anything.

The teacher might also assume that the MBD child's behaviour is due to her own failure in the classroom, and then she will be reluctant to contact the parents for fear of being accused of incompetence. The school doctor, who is pledged to secrecy, says nothing or knows nothing.

The MBD child can plead a headache or stomach pain in the mornings to avoid having to go to school. There are MBD children who have avoided gymnastics for months by complaining of a sore ankle or knee.

It is difficult for the MBD child's schoolmates to accept one who looks just the same as other children but is a veritable little devil in his behaviour. In many ways, it is easier to accept a handicapped child when his odd appearance already shows that he is different.

The child's ability to win friends and gain acceptance during his first years at school depends greatly on acquiring skills which the MBD child is unable to master. The girls must be able to skip or play hop-scotch, the boys should shine at ball games. It is not just the clumsiness that the older children find disturbing. It is the child's embarrassing inability to follow the rules of the game. The consequence is that he is not accepted by his schoolmates and is exposed to humiliation in various ways. For instance, he may overhear when it comes to team games: "Must we pick him again? We had him last week".

The MBD child is often bullied. He is easily cheated and very ready to laugh or burst into tears. There are always schoolmates who perceive that here is someone to exploit. The MBD child may find that he can "buy" a little popularity occasionally by sharing his sweets. But if he has not enough pocket money for this, he may steal it from the household cash at home or start shoplifting. Another well known way of attracting attention and winning his schoolmates' approval is to play the fool in class.

The MBD child is the substitue friend who will have company and sympathy when all others are occupied.

If the MBD child in spite of his persistent attempts fails to gain the approval and attention he seeks among his schoolmates, he might turn to other children in the hope of better success. There are often children who are younger than he is, and because of his delayed maturation he might feel more of an equal among them. But he might also seek the company of a social youngsters who hang around street corners and engage in petty theft and mischief. In the worst case, this can lead to the start of drinking, drugs and even more serious crime.

THE MBD CHILD AS A GROWN-UP

There are few reports on MBD children who have reached adult age. It is known that at least the hyperactivity becomes less apparent and that by the age of 12 the boy is seldom as uneasy, anxious and restless as he was at early school age. His spelling can continue to be faulty and his ability to read retarded. But this may no longer have such a negative impact and many of the MBD children come to be content enough with life and the occupation they have taken.

We know, however, that MBD children often take jobs which do not correspond to their intellectual capacity when they are grown up. If the old lack of self-confidence continues to haunt them the fear of failing tends to decide the choice of occupation.

Studies from the USA report depressing results indicating that many MBD children end up in psychiatric institutions or gaol when they reach adulthood. The fact that the handicap can have such disastrous consequences underscores more than anything else the need to focus more attention on the acceptance of MBD children and their handicap, and to treat and rehabilitate them in good time.

It is high time that the resources of the community are challenged more than they are now to help and support this large group of MBD children. Preventive activity, organised treatment and purposeful rehabilitation should be planned and initiated.

WHEN CAN MBD BE DIAGNOSED?

The hardest time in a MBD child's life is often his school years. Many failures and setbacks can be avoided if the diagnosis is made and treatment started at pre-school age. The diagnosis should be confirmed as early as possible, viz. when the child is four to five years old.

Cooperation between physicians and kindergarten teachers can be rewarding: pre-school teachers are known to have great experience in recognising children who will have trouble in school. Health personnel should exploit this knowledge when they suspect and diagnose MBD.

Children who suffered severe diseases in the neonatal period are at greater risk for MBD than other infants. These children should more often be given routine examinations and be more thoroughly investigated than the "normal" child population.

The more widely we can spread information about MBD, the greater are the possibilities of early diagnosis. Parents who have heard of MBD symptoms and know how the handicapped react, have sought help when their child has shown suspicious symptoms. However, the diagnosis of MBD should always be confirmed by medical specialists. A teacher, a psychologist and a physician can all separately suspect MBD, but hardly any one of them alone can make the diagnosis.

The diagnosis of MBD does not require expensive equipment. For the most part, the knowledge and training of existing health care personnel is sufficient. A detailed knowledge of the developmental milestones of healthy children is also essential. Only in this way can the deviations from normal development be detected.

If the child's development differs from the normal, we must before reacting to it determine whether the deviations are of any clinical importance whatsoever. We must allow children the right to behave and think individually. Intervention is called for only if the child's awkwardness makes it difficult for others to bear him or for him to adjust to the demands of society.

Screening systems are desirable for early diagnosis of MBD. In Finland, the Helsinki region uses a neurodevelopmental screening

examination system with a cumulative point scoring system for abilities in which the child fails. The tasks tested are motor function, perception, language skills, behaviour, vision and hearing. The whole examination takes only 15–20 minutes and is in routine use in child health centres. Children with high scores are referred for more thorough neurodevelopmental investigations.

CAN MBD BE CURED?

No two MBD children are identical. They differ not only in their clinical pattern and behaviour, but also in the degree of their handicap. It is essential, therefore, that all treatment is individually planned and directed towards the specific disturbance that ails the child.

Some children with slight deviations can manage quite well simply if those in their immediate surroundings are informed of the handicap. They can go to an ordinary school and can with the years be symptom-free. Others who have more severe handicaps need several years of treatment. They must also have rehabilitation treatment planned by experts from different branches.

It is not easy to know what one can and should demand of an MBD child. Possibly it is most difficult to decide this both in the home and at school. Specialists can chart the child's ability and capacity. Even if the child's intellectual capacity is within normal limits, the test profile can be extremely irregular. The profile shows the test in which the MBD child is better than average and in which he is worse. Thus it can ascertained what training the child requires and what he is capable of absorbing.

The MBD child needs a lot of rehabilitation that should be carefully planned. There is no point in insisting on training that the child is incapable of absorbing. In areas where he has the capacity to develop the training should be given in a positive spirit and enjoyable way so that he begins to find rewarding the tasks he learns to perform. Much of the training can easily be "smuggled" into the daily routines as home.

The primary responsibility for early diagnosis of the handicap probably lies with the physician in charge of the health control

examinations. Early diagnosis should be followed by an early start with treatment, and this depends largely on team work. The pediatrician or pediatric neurologist should be responsible for ensuring that the child receives individually planned therapy. Consultations with other specialists are often necessary. The child psychologist and the child psychiatrist can handle the behavioural problems. They can also teach the child to accept that he is a person with a handicap which probably cannot be totally overcome with treatment. The physiotherapist and the occupational therapist can help to train the child's body image, improve his sense of balance, muscle power, coordination of movements, fine motor performance and several functions that are needed in daily life. Speech therapy will be needed if the child has articulation errors or needs to improve his language skills. Special teachers in pre-school and school stages could encourage and emphasise skills for which the child shows some aptitude. They could try to train the MBD child in tasks which he is able to master, while avoiding tasks which tire him and which he has no possibility whatsoever of accomplishing or learning. An assistant is often needed in the first school years.

Enlightenment of the public and all occupational groups who have to deal with children can sometimes be enough to ease the concern. The handicap must be acknowledged. All who come into contact with MBD children should know that they are not just naughty and wilfully contrary, but that the problem arises from brain dysfunction. When the background is recognised, understanding and help are easier to give.

Information about the handicap is also necessary in the milder forms of MBD. Even the less severely afflicted MBD child must struggle harder with his homework than his schoolfellows if he is to keep up with them. For this effort he deserves both praise and encouragement which may be hard to bestow if the extent of the exertion required is not appreciated.

Important as it is to know the limit of the MBD child's abilities and not expect too much, it is equally important not to leave the child to his own fate in the belief that he is not learning anything anyway. It is hard to be exposed to indifference and rejection.

Many MBD children have done better in school when they have been told about the cause of their failures.

The treatment of MBD children takes years and demands patience not only from the subjects but also from all those involved with them.

The life of MBD children can often be improved by simple means once we know what to do and how. Knowledge of how to live together with an MBD child is essential, just as is knowledge of how best to help the child manage daily situations and awareness of the possibilities of rehabilitation.

WHAT CAN BE DONE AT HOME?

The parents should be provided with detailed information on the child's handicap and they should join the group of specialists in the treatment team. Although the parents should participate in planning and carrying out of the therapy, this is not to say that they should be held responsible for its success. They have troubles enough as it is. But this does not preclude them helping by applying some of the training programmes at home.

The parents should concentrate on teaching the child social adaptation and general good manners, leaving the school to take on the schooling side of the problem. If help and supervision are required in school work the best solution is that this should be taken on by someone outside the family. Parents should not place stress on progress at school at the expense of other accomplishments which should be taught in the home milieu.

There are a number of books and games available that might be helpful when an MBD child needs training. For instance, many pre-school books help to train various skills. Educational toys are often helpful, too. They are available in toy shops or can be borrowed from toy libraries.

It might be nerve-racking to have to wait so long for any results of the treatment to appear. It is not impossible that more rapid help could be given through making small changes in the child's environment that will make daily life easier.

School work might be eased by eliminating all disturbing elements in the surroundings. The desk should hold only what the child needs for his work. It can even be screened off and turned against the wall.

Radio and television noises can distract the child. There should be no schoolmate waiting impatiently in the next room. It should be remembered that the MBD child requires more time and effort to finish his tasks than an ordinary child does.

The pattern at the dining table can be changed. The MBD child might repeatedly knock over his milk glass. It could be that a gaudy table cloth distracts his attention and makes it harder for him to estimate the distance and localise the glass on the table. Anything that is not needed during the meal should be removed—unnecessary mustard pots and ketchup bottles can be distracting.

Dressing is usually a great strain on both the parents and the child. Much can be achieved by small improvements that make dressing easier. If the child cannot distinguish between right and left, he might learn to connect a red string around his left wrist with a red spot on his left sleeve. If he cannot button his clothes, he could be given a T-shirt without buttons, and to overcome the shoe-lace problem he could have laceless shoes.

Firm, calm and consistent handling is best for the MBD child. He has difficulties in deciding how and in what order his tasks should be done. Therefore, it is advisable to avoid several alternatives. Fixed daily routine makes life easier all round. When changes are planned, the child should be informed in good time and carefully prepared.

When setting tasks for an MBD child, it is important to remember that he probably cannot comprehend or execute more than one part of a task at a time, any more than he can perform tasks for which he is not mature enough.

HOW CAN PRE-SCHOOLING HELP?

Once it becomes the rule that an MBD child can be diagnosed and treated at pre-school age, the kindergarten should have access to equipment and methods for training to overcome disturbed

function. This would help to prevent learning difficulties at school age. Many MBD children manage quite well in ordinary pre-school when the staff have been informed about MBD and are given the support and guidance that might be needed.

Toys, books and games that assist in training for different tasks are already available. Ring and ball games are used for motor performance, balance and coordination of movements. Both fine motor performance and perception can be developed by drawing, painting and modelling. The child learns to work in a group, to bear with distractions, to train speech, memory, concentration and body image. He learns to listen to stories, understand what the kindergarten teacher is reading and saying. He learns to cooperate with other children. And much more.

For MBD children with severe dysfunctions, special classes with small groups of children and specially trained personnel are often required in pre-school. The teacher should not set the child tasks which he cannot possibly do. It creates despair and obstinacy. The tasks should be assessed according to the developmental age and not the chronological age. The child needs a lot of encouragement and appreciation for work that he can and does manage to do. A five-year old who draws a person can be considered to do it quite well if we realise that the child is de facto performing as a three-year old.

HOW DO MBD CHILDREN MANAGE IN SCHOOL?

The type of school that is best for the MBD child depends on the severity of his handicap. Many will manage in an ordinary school if their dysfunction is slight or if they suffer from MBD combined with late maturation which will help them as they grow to catch up with their schoolmates' lead.

The MBD child might also manage in an ordinary school because the skills he has already acquired have taught him to compensate for his dysfunctions. Other parts of the brain might also have taken over functions which the disturbed part has been unable to control.

In the best case, the MBD child does well and the symptoms of the brain dysfunction might fade and even become imperceptible in the course of the years.

Severely handicapped MBD children have a considerably worse time. If they cannot benefit from the ordinary school, the best solution is special classes with a shorter curriculum.

A small class with six to eight pupils might be the best alternative for many MBD children. The formation of a class of only MBD children will depend mainly on the participants' grade of hyperactivity. Half a dozen or so unruly children could be too much for the teacher.

The best solution would be a school system tailored to the requirements of each MBD child and allowing full scope for individual variations. He could have personal coaching in the subjects in which he is backward, and for those he can manage he could attend normal classes.

The normal school's goal of imparting a given quantity of knowledge every school term is not always appropriate for the MBD child. The greater the learning disability, the more important it is to decide what is really essential for the MBD child to learn. It is much more important that he learns the values of the coins he will use and how to tell the time than to struggle for weeks with photosynthesis or memorising the names of mountains on the other side of the world.

This philosophy may not prepare the child for an academic degree, but it will help to avoid some of the failure and despair which undermine the psychic balance. MBD children, too, have the right to grow up without loss of self-confidence.

Small changes in the environment can help the child to do better in school. Bad handwriting can be improved by teaching the child to write in block letters. He might find it easier to write with a big and heavy pencil, using every other line. And it is important to remember that he needs more time to finish the task than his schoolmates do.

Gymnastics is difficult for the MBD child. It would be easier if he was familiar with the gym hall and could practise the movements before starting the lesson. The same is true of handicraft which can

prove a terror for both child and teacher. The MBD child is clumsy and accident-prone. In an unguarded moment there might be saws, axes and knives flying all over the place. Because of his perceptual difficulties he finds it difficult to understand how a nesting box can be made of straight pieces of board. If this sort of problem were given a great deal of thought, for instance in the summer holidays, the problem might diminish in school.

The MBD child has to work longer and harder to achieve the same results as his healthy classmates. This must be taken into account when allocating homework. The harder effort required can leave the MBD child more tired than the others. Because of his disturbance, the MBD child is sometimes capable of coping more successfully, sometimes less successfully.

Constructive discussions between the teacher, the parents and the treatment team are often prosperous.

IS TREATMENT AT ALL NECESSARY?

The majority of children with MBD improve and even get quite well with time. As they maturate and because they learn to compensate their dysfunctions they narrow the lead that their classmates have earlier enjoyed. Given this, it might be asked whether diagnosis and treatment are at all necessary and whether the children should unnecessarily be classified as abnormal. It could be thought that there is no point in forcing training programmes on them which are unnecessary and indubitably cut into their free time.

It could be said that examination and treatment of MBD children are justified only when the parents are worried about their child's divergent development. But this means that the diagnosis is not made and the treatment is not started until the problems are already evident. A much better alternative is to ask for early diagnosis and treatment long before the problems become apparent.

It has been stated that if MBD in a child has not been diagnosed by the time he reaches school age, it will only take one to three