Psychiatry an Overview
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Module-04
Psychiatric Disorders and their treatment-2
Lecture-16
Autism Spectrum Disorder

So welcome to this third talk on childhood and adolescent problems. So if you remember in the last two lectures we generally had an overview of what could be a problem and what could be a illness. There are illnesses as I showed you in the epidemiology. So today we will be talking about one of the major illnesses which are illness like schizophrenia is a illness, and bipolar is a illness, and OCD is an illness in adults. The one of the major illness which is found in children is called autism it's like a maze, some maze for anybody.

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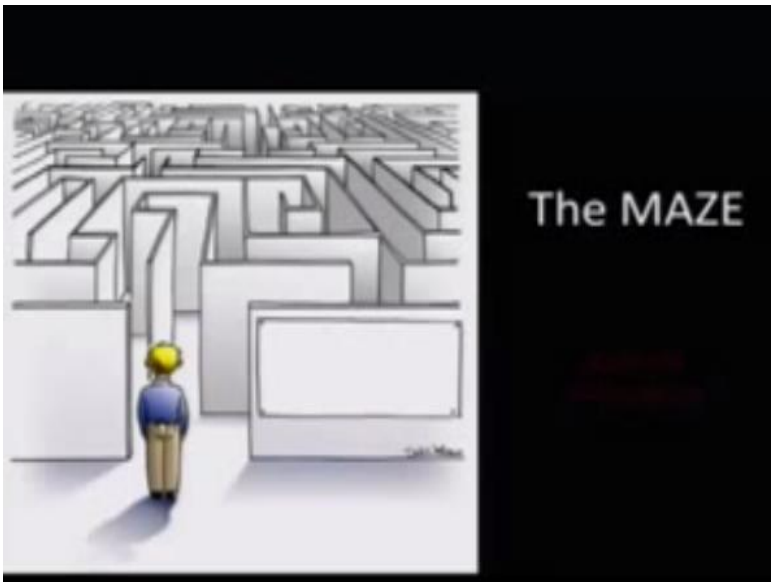

Who tries to understand and for the kid himself.

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But in one way autism we consider it as an illness and try to treat it and we are still trying to find out the exact treatment and solutions for it. But autism if you look at it you must have heard of this term, the common term which is used these days, one of the films called Rain Man was the thing which actually brought into focus although the illness has been known for very long. Autism is a different makeup of mind and some people, some high functioning autistic kids, adults also says that we are not ill, why are you trying to treat us.

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So this is one of the good expressions which I picked up somewhere and I almost thought I will show that, it is a cat it is not a defective dog. So, cat is happy being cat is not a dog. So any attempt to make cat into a dog will fail, whether we have to facilitate them to be a cat, so if we try to understand it this way.

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So just read this, I am first and foremost a child is just one aspect of my character. And these are almost like symptoms ordinary sights sounds and touches of everyday life that are normal to you can be painful for me. It is not that I do not listen to you, it is just that I can't understand you, I like routines it is hard for me to tell you what I need, when I do not know the words you say. Be patient and consistent focus and build of what I can do rather than what I cannot do.

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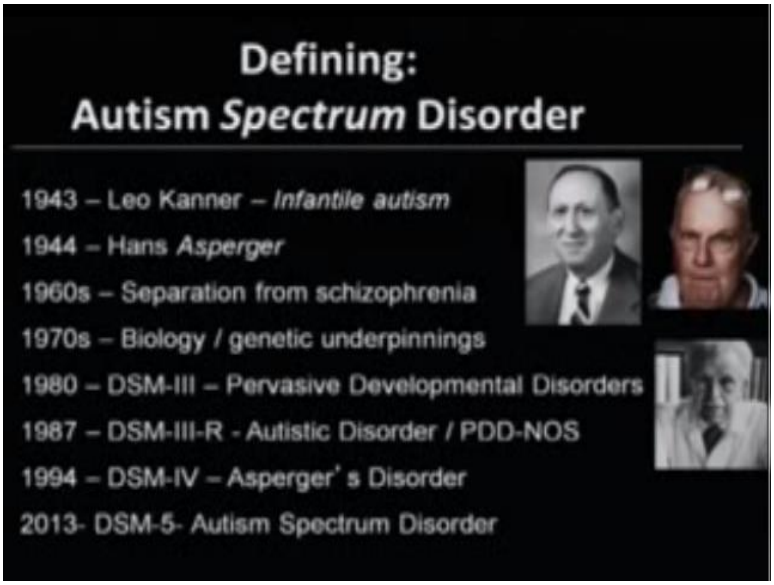

I will just come to what it all means. So this is the history 1943, Leo Kanner defined infantile autism, 44 Asperger, 60s separation. It was thought that is one sort of schizophrenia that somebody is developing normally and develops schizophrenia, but it is different. Right from their birth they may be normal at till two years of age, but most autism develops by three years of age.

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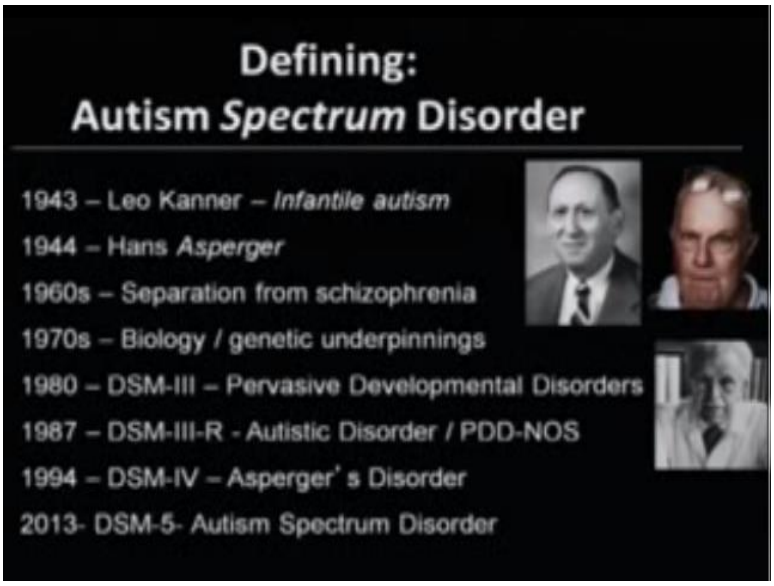

There is a separation from a schizophrenia happened around 60 understanding biological and genetic underpinnings and then this whole diagnostic thing. Pervasive developmental disorder is a broad term for lot of these illnesses which are clubbed under one. Autism disorder PDD-NOS, Asperger's disorder autism spectrum disorder.

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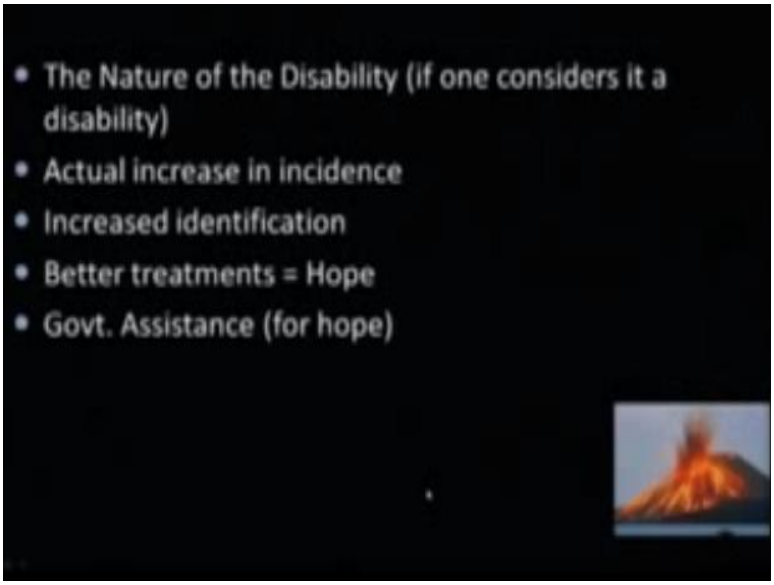

But what we are seeing or maybe we are seeing, because we are trying to understand it from the term of disability, I am still not sure about it. If one considers it a disability or if you accept does the person is like this there is not as disability. As that kid has returned but I am a cat, I am happy being what I am just different. I may not understand the words you are saying, I may not respond to stimuli as I am responding, as you respond, some touch may be very painful to me, something may be very, very disturbing to me.

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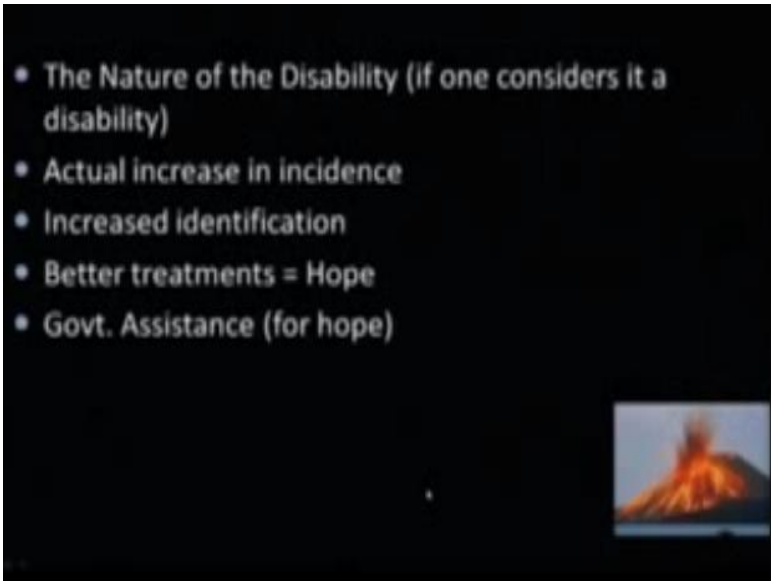

There is a actual increase in the incidence. Initially it is used to be one in many hundreds then it became 1 and 150 and now it is 189 kids all over the world.

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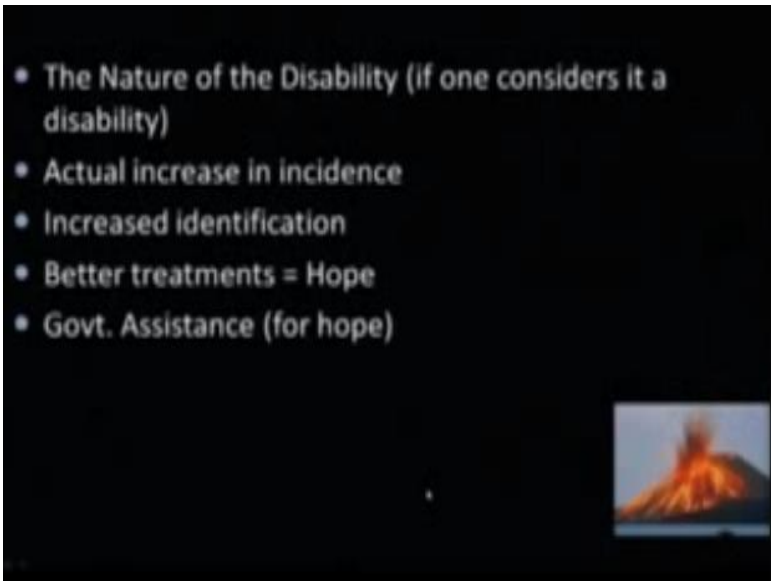

It could be because that we are identifying it more, and the better treatments have given hope.

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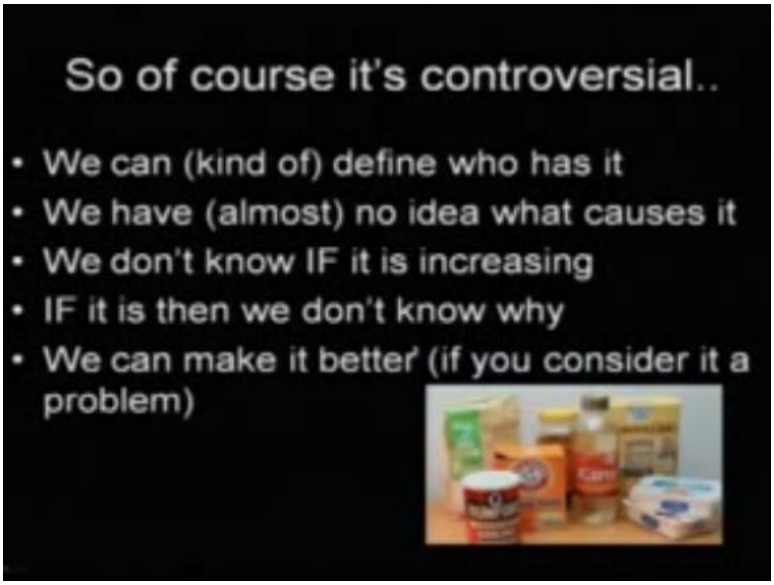

Now this is a treatment or we are just trying to bridge the gap between this autistic kid and the normal kid.

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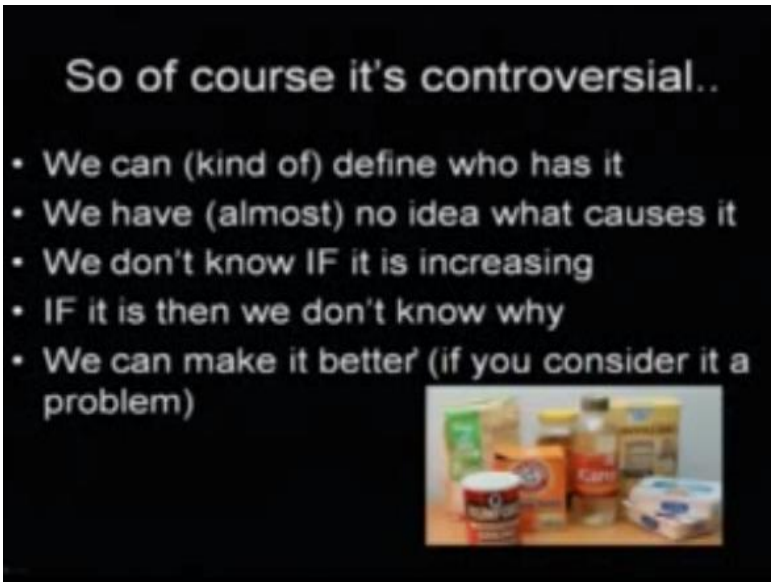

So the controversy is still right, we can define who has it, we have no idea what causes it, we do not know if it is increasing whether we are identifying more or it is increasing. If it is increasing we still do not know the cause, we can make it better, but there is a whole lot of market which offers right from diet to some meditation to some exercises and some stem cell therapy. But in one word if it is a illness and we think it is a illness there is no definitive treatment for it.

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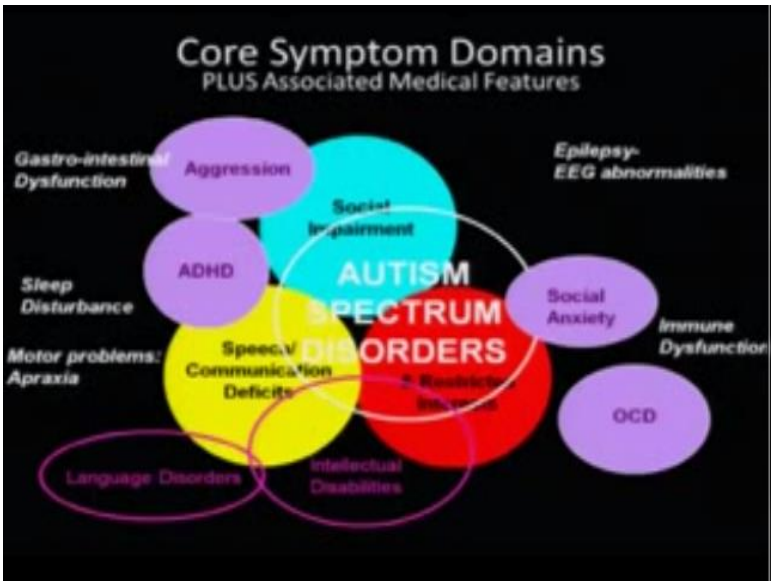

So there is a whole lot of, what are the core symptoms? Core symptom is his speech and communication, social anxiety, restricted interest, intellectual. So these are a lot of overlaps if you look at it, you find EEG abnormalities here, you find Immune Dysfunction and some, you find some OCD symptoms, you find social anxiety, there is a social impairment, aggression, attention deficit hyperactivity disorder here. So there is a lot of overlap.

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What is happening core symptoms if we look at it, if you ask me are this, there is a impaired social communication, there is a restricted repetitive behavior. So communication in the sense of social reciprocity, nonverbal relationships, repeated behavior, insistence on sameness, interest and sensory abnormalities.

You can find the rest language impairment, intellectual disabilities, genetic problems, like these are some genetic things which have -- it is very well comorbid with fragile X which is a genetic syndrome found in boys, there is something called red syndrome which is in girls.

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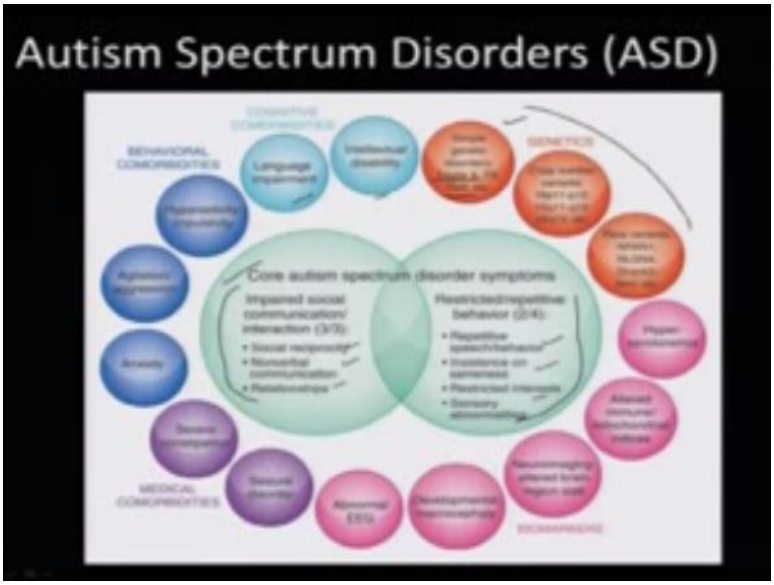

So these are all things which you find in genetics increased level of serotonin has been implicated in the blood altered immunology is the altered brain region such as we find lot of it in this schizophrenia, we find in different type of things in brain region and all. Problems and developmental, physical developmental parameters abnormally EEG you can find epilepsy along with it.

And then not behavioral issues aggression, these are all comorbid symptoms which could be part of the autism or may -- so not everybody has all this, but the core symptoms of autism if you ask are the child in simplest world, the child is lost in his own world does not use language for social communication, is insistent on some repetitive stereotype behaviors.

And is hyper or hypo sensitive to certain stimulus, so what you find is in a kid and this can range from say very mild autistic child which we call as per just syndrome or high functioning autism that may be doing other things, but generally lost in his own world, not responding to a extreme where the child is not at all maintaining eye to eye contact, is not interested in the environment surrounding the eye molar.

Is not using language except once in awhile to communicate, not using language for social communication does not mean the child does not have language. In fact some of them are very high, so having language in a high IQ not having a mental retardation, a good practice prognostic factor.

But a child will suddenly burst up singing a song in a very, very repeated tone without any emotional intonations of a different language, which nobody has ever spoken in the house, or child may be responding very well to the some other stimulus, like some kids they just, it will give them a huge set of writing they would immediately pick up grammatical mistakes without really knowing the language.

Some kids are very good at mathematics, not all kids are good and have one or two specific skills, but some of them really are very exceptional in something, they used to be called like idiots savants in old days we still find in lot of, a lot I should not say lot in some of them, one or the other skill overwrite the other skill.

So that they have language, they do not use it for social communication in the reciprocal play where we are understanding the others emotion, and the interacting is important, that is lacking. So that we suspend that there may be something wrong in the areas of the

brain which actually control or exhibit empathy in solar and singular guide as part of singular guide as. The third thing we will find is that they may have repetitive behavior.

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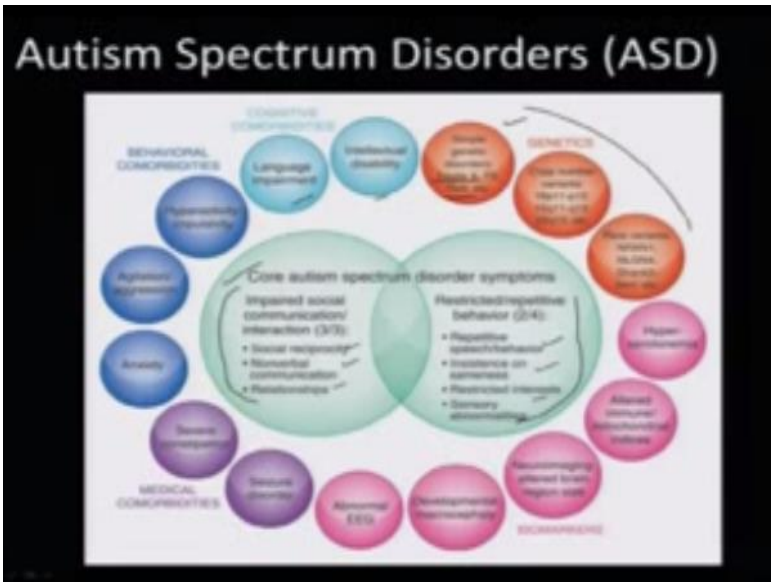

Some kids will get stuck to one object like rotating balls, toothbrush and keep doing same thing again and again, they insistence on sameness which change their routine, change their timetable, they will get very upset. And since there is lot of these kids you find flapping or jumping and getting hyper excited partly. So we will talk about this when we talk about the theories.

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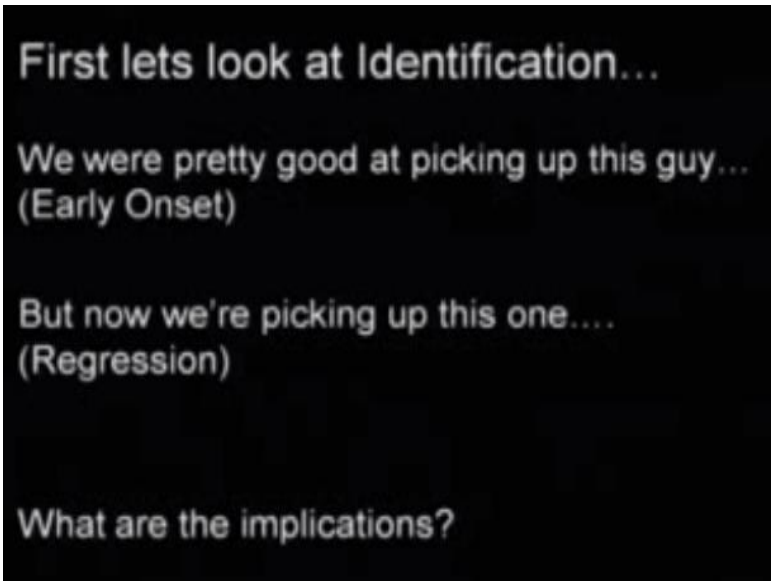

So how do we identify early onset, first we were looking at when we initially used to diagnose, we used to look at the autistic symptoms the onset of autistic symptoms. So we have changed this angle a little bit why we are identifying at least we also look now if the child is developing normally say around one-and-a-half, two, three years of age and that child starts regressing the motor, the social, the emotional, the adoptive milestone start falling. That may be the first sign of autism, what are the implications, the implication is.

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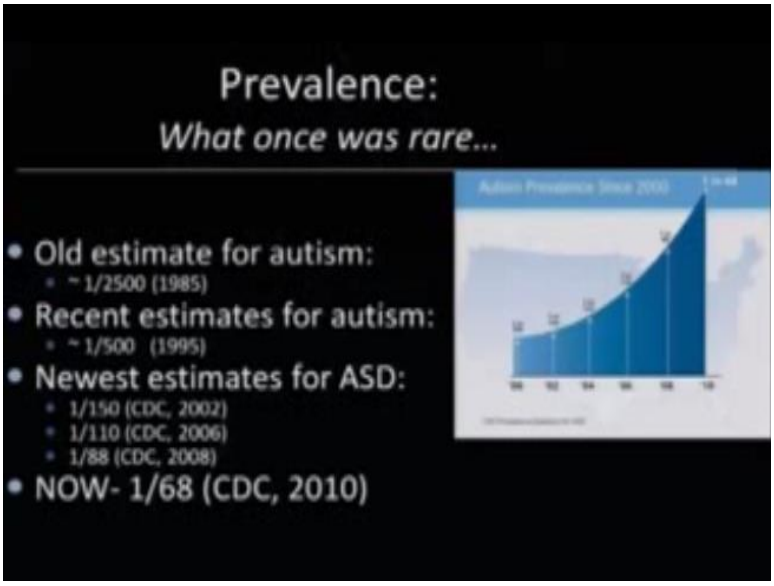

Now we find that what was once, 1/2500 became 1/500 in 95 and now 1/88 by center of disease control 2008, 2010 still brings it down further you can see this.

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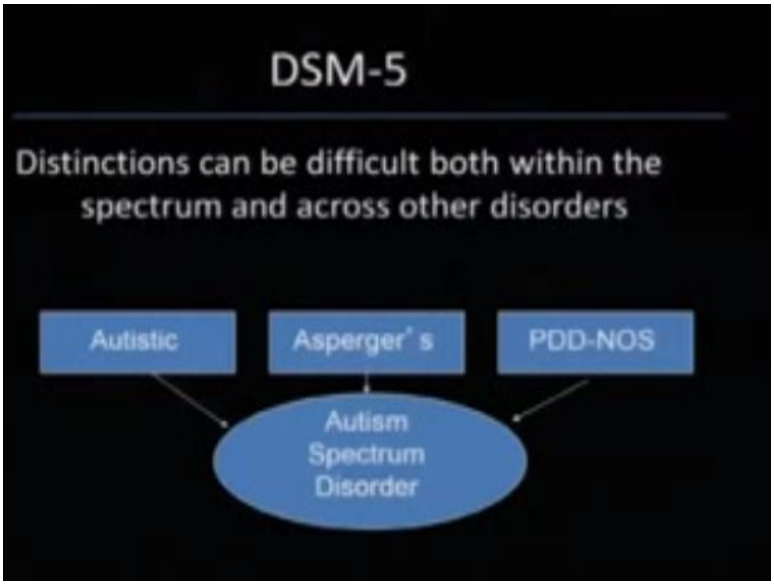

So DSM-5 which is the newest version of diagnostic and statistical manual of diagnosing psychiatry illnesses they can be difficult both within the spectrum and across their disorders. So there is a lot of overlap as I showed you in that. So autistic asperger's was a high-functioning autism, and there is some non specific type of pervasive developmental disorder which may have autistic trades and not really be core autism.

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So as I said deficits in social communication all three have to be there. Deficits in nonverbal communication, deficits in social and emotional reciprocity, deficits in maintaining relationships right from childhood, right from childhood early in childhood. Repetitive pattern of behavior two out of this is stereotype motor or verbal behavior as I said jumping, flapping, playing with something.

Unusual sensory behavior there they may be very sensitive to maybe putting a toothbrush or too warm water and they really become very excited or too loud sound, when they hear loud sound or grids go out and when there is a honking going on they become very, very upset. Excessive adherence to routines and ritualized behavior restricted interest, they present early childhood manifest when social demands exceed capabilities.

So when does it happens, when the child is normally, if a child is kept in a deprived environment that social demands of talking, of expressing, of asking you are thing or giving a socialist smile, or playing with other kids is not required when you are one or two years. It is possible the kid maybe having all this, but because the environment is not such where all these skills are required.

So it first exhibits when you are going to the school or when you have to step out at three years of age to play with other kids, or when you become slightly more expressive and

with talking, and when you are expected at three years of age to ask for something or make eye to eye contact or wish, then these things suddenly come to the front.

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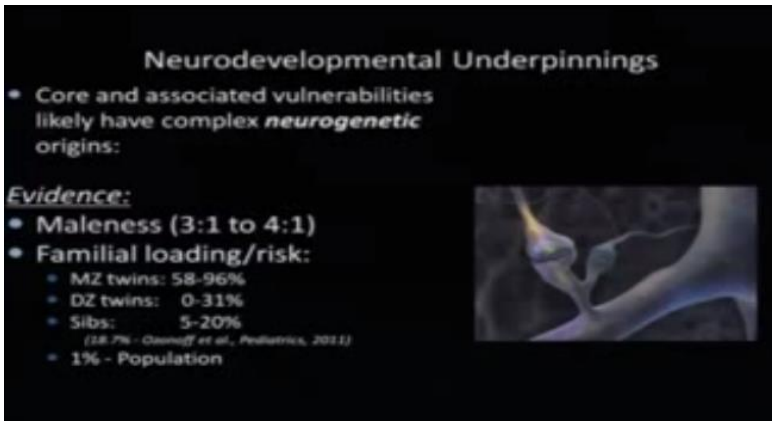

So there is a very complex neurogenetic origin we still do not know, we have theories for it like one of them is a central coherence theory which assumes that all of our senses take the inputs together as we are talking about development, puts it, integrates it, and makes the one coherent picture of the world outside.

Possibly the autistic brain is not making a coherent picture of the world and all things are running ever and it depends on which stimulus and which sensation the child starts responding to and he starts behaving abnormally. So derived from this is what comes is called sensory integration therapy which is a essential part of the training of autism.

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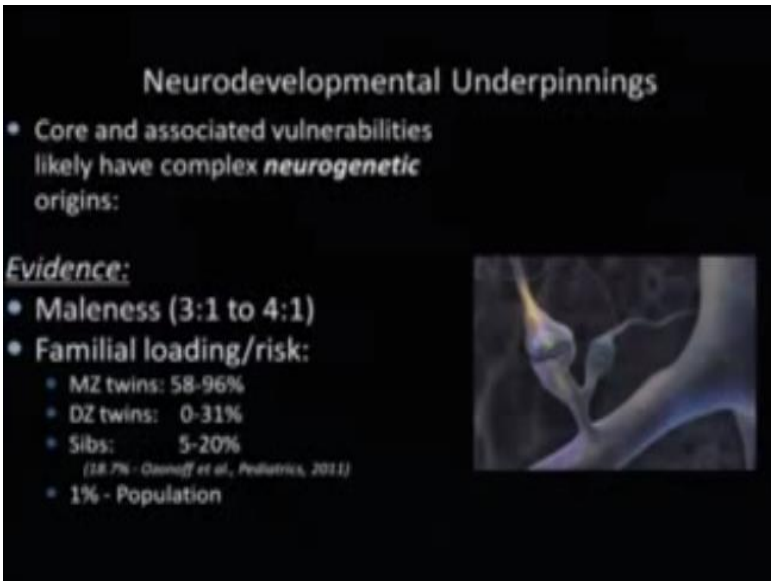

Now again what we are trying to do, but I will come to that evidence is again male preponderance 3:1 to 4:1 is the huge familial risk monozygotic twins 58-96% it is still not 100%. Dizygotic sibs that increase in 1% risk like schizophrenia.

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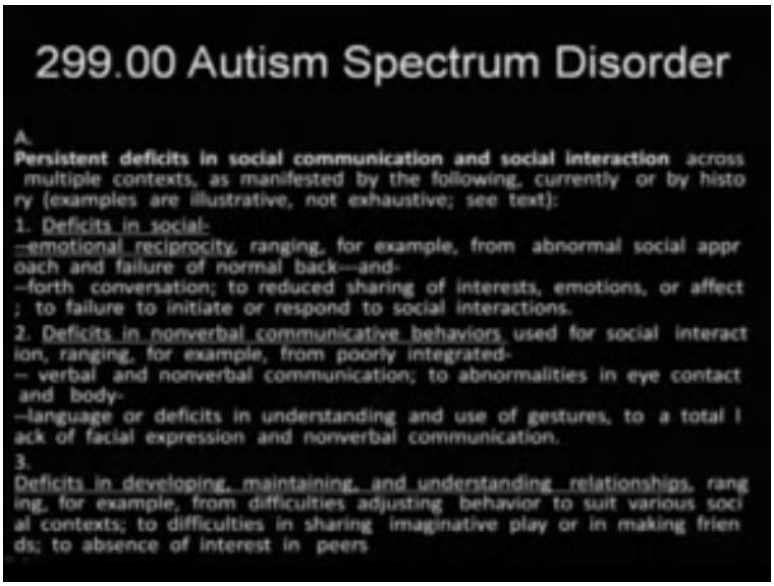

And this we have already talked about.

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This is an ICD-10.

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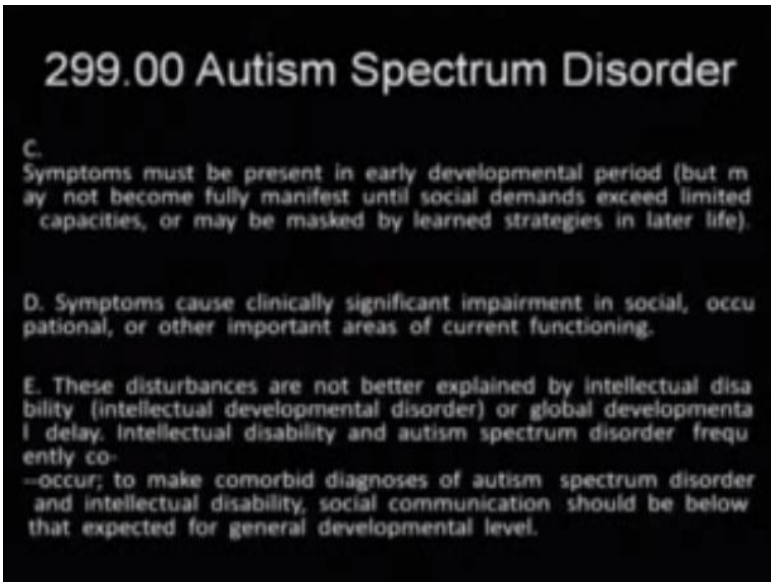

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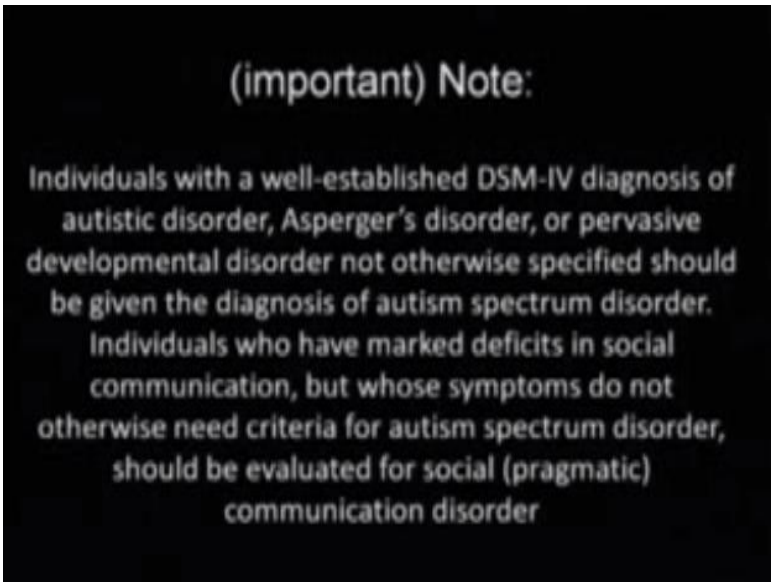

So this is a spectrum disorder where something, some trades are present, some are not present.

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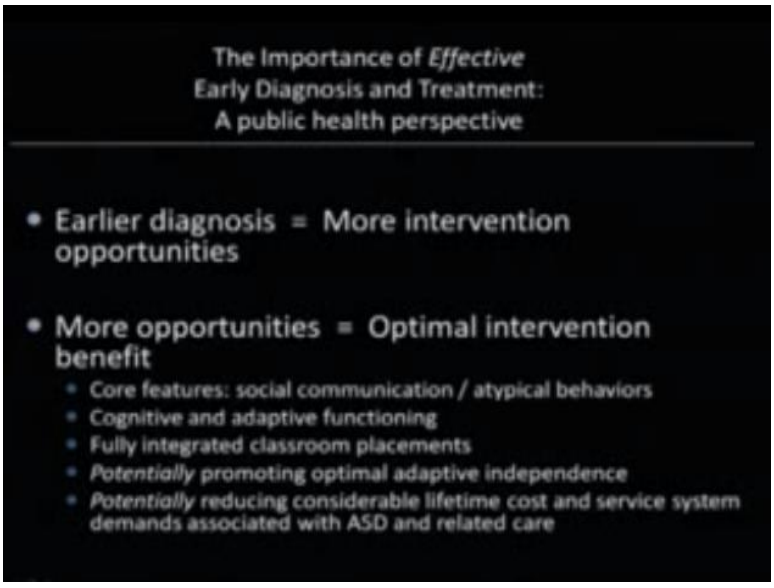

But again as I go back we talk of illness, because these kids are not fitting into the development which has shown by other kids. What we understand is that their brain is made differently and that is why -- see like schizophrenia comes later in the age when the pruning is happening, and so schizophrenia is an illness of an adulthood, all though may it start at 16.

But there has been a normal phase and so it is not a develop interrupt, there may be a neuro developmental theory of schizophrenia, but schizophrenia is not a developmental disorder cause maybe developmental. So a person with schizophrenia has seen a normal life, these kids may have this temperamental thing, they may be developing normally, but suddenly something switches on, or it just as you saw in the previous slide.

As the pressure of the environment increases the whole thing is switched on and then it goes on. So their development itself is different, so what we are trying to do is bring these different kids nearer to the mainstream. So go to the first slide, the cat is a cat, dog is a dog let that thing be the cat, let cat be the cat do not make a dog, but let it better be adjusted with the dog hood and cat hood.
So people with autism be any attempt to change them to make us make them like us, we do not know the way now, someday we may, but till that time what we are trying to do.

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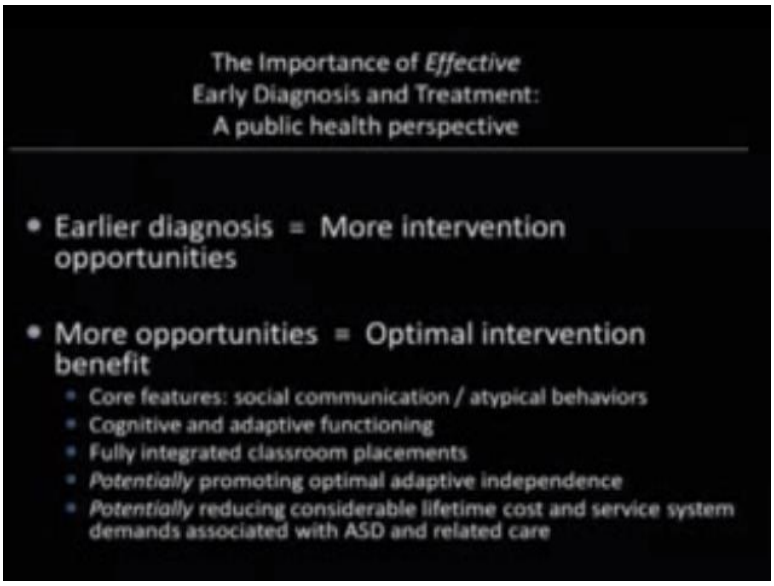

Is if you look at it, so what we do is earlier diagnosis helps you in early intervention, if you remember the brain grows still whatever 17-18 years so that is the window where we have to work. So optimal intervention, core features, social communication, cognitive adaptive functions, fully integrated classrooms.

So if we separate them as disabled kids and leave them in the way that they can develop on their own they would get separated from the society and that would defeat our purpose of mainstream, mainstreaming them.

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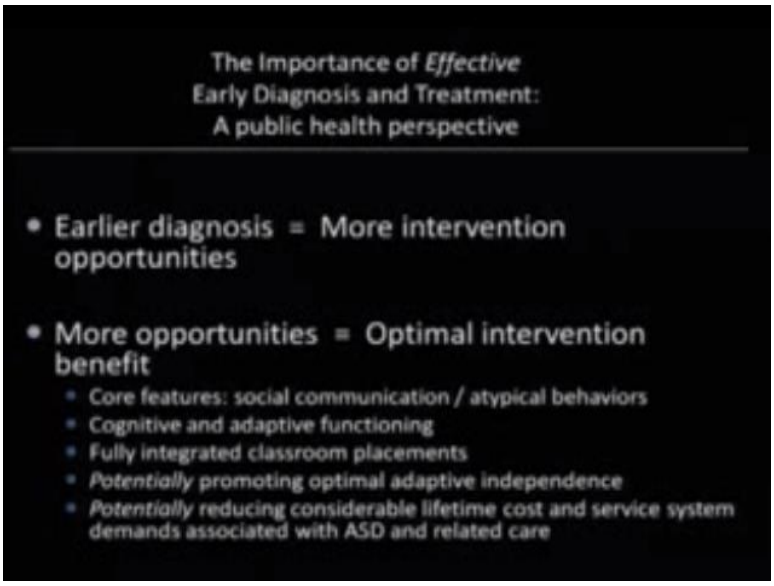

So we need more classroom placements potentially promoting adaptive independence which means that as they grow, they should also develop a skill of being on their own. Because with their lack of social communication, lack of language the language for social use and being very, very restricted in the behavior may actually not allow them to fit it into the normal mainstream and the cost of it.

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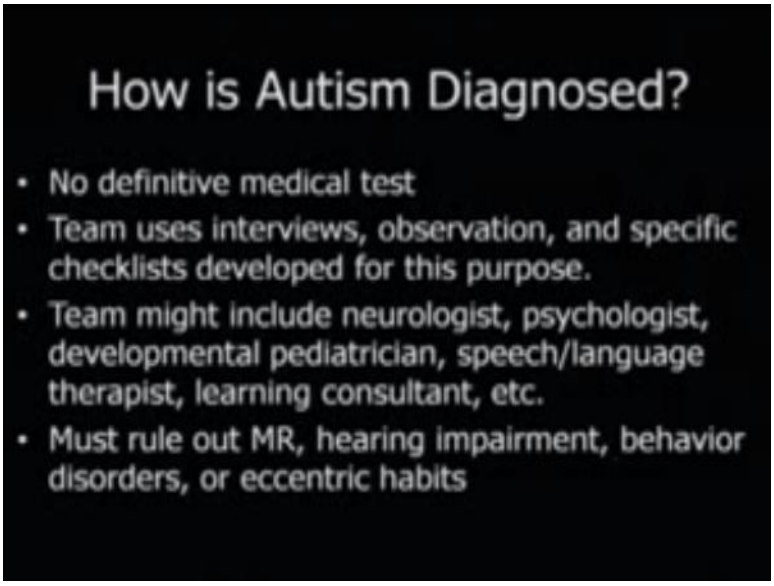

So these are the basic aims, so how it is diagnosed as I said there is no definitive medical tests. Team uses interview, observation, and specific checklists developed for this purpose. They may include neurologist, psychologist, speech/language therapist, learning consultants etc. They must rule out mental retardation, hearing impairment, behavior disorders, and eccentric habits.

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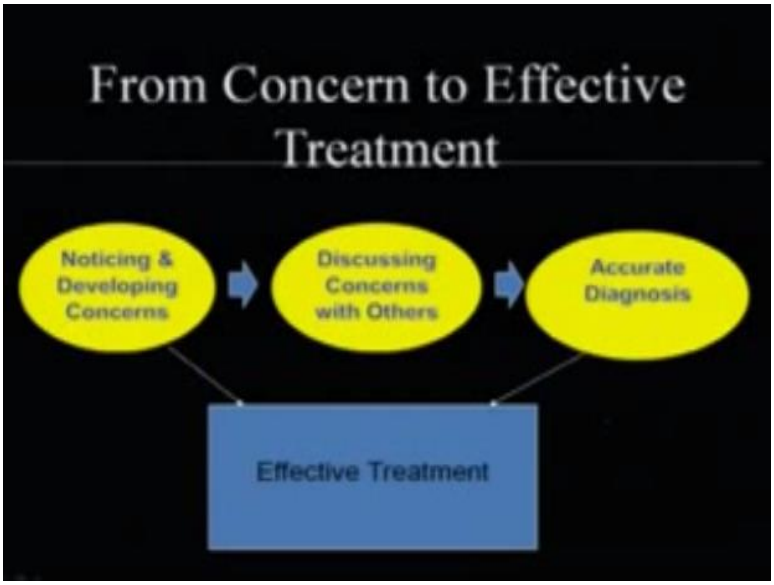

So in presence of these autism may not be very definitely been diagnosed. So develop concern, discuss, accurate diagnosis do a effective treatment.

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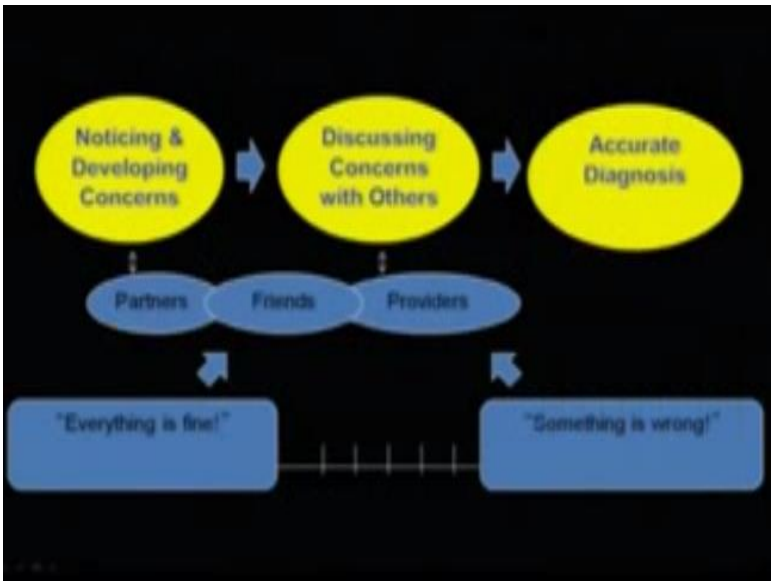

And as I said.

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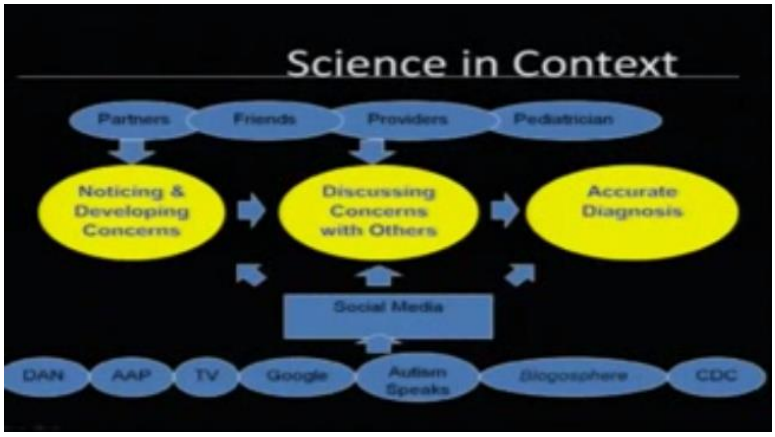

So these are science we are talking about.

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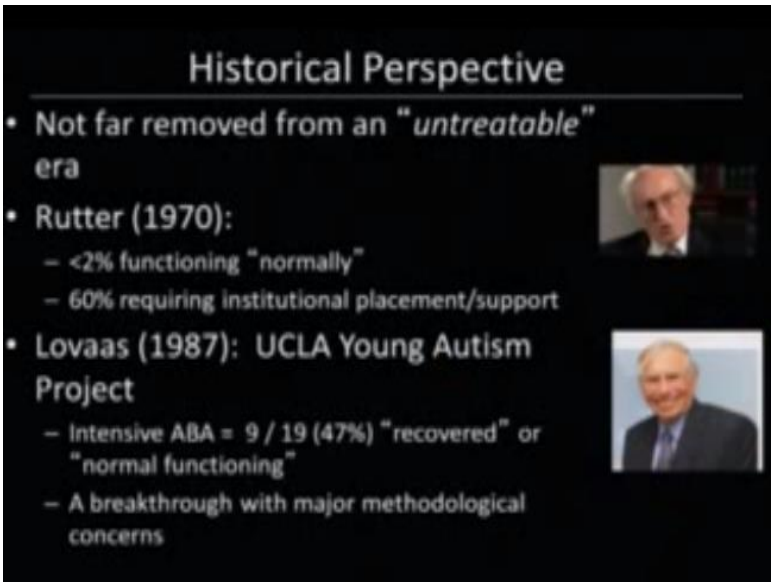

So we are actually not very far from the "untreatable era" there is no definite treatment, 2& functioning normally, 60% requiring institutional placement as we are talking about 97 there is something applied behavioral adolescent 9/19 recovered on normal functioning. So the methodological concerns are very important.

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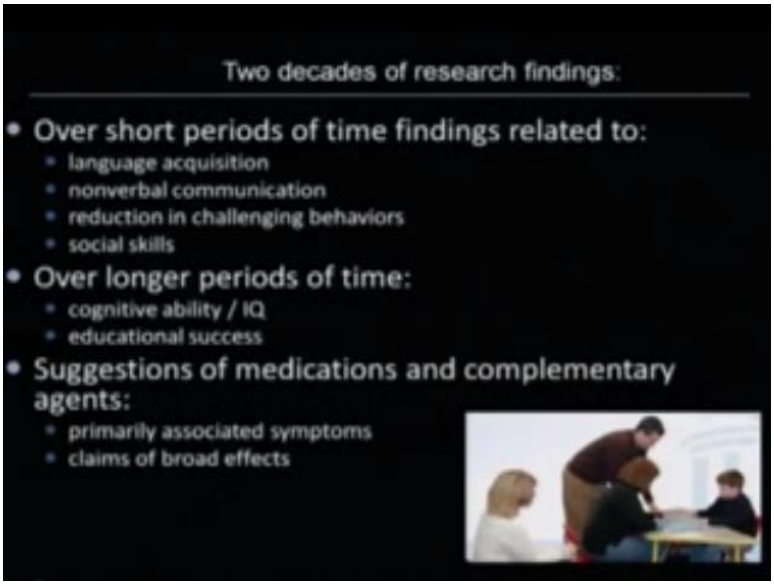

Over short periods of time we focus at language acquisition, nonverbal communication, reduction in challenging behaviors lie aggression and repetitive behavior, social skills over longer period of time we will look at how the cognitive ability, so what we are basically doing is that within a short span of therapy and treatment there are no medical treatment for it, there are drugs which we give to control the behavior.

Something like Risperidone they affect a little bit, if you find EEG abnormalities then we have to really look and treat the epilepsy. But what we do is basically do therapies and there are multiple modes of therapies which are being worked upon and some of them are effective, some of them are more effective than others.

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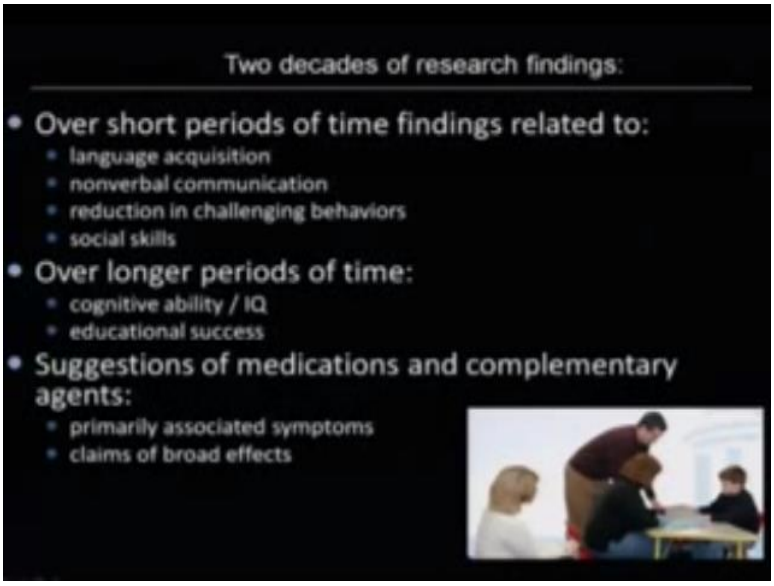

So short term focus is language acquisition, nonverbal communication, reduction in challenging behaviors. And as the brain grows we are also bothered developing cognitive abilities if possible educational success.

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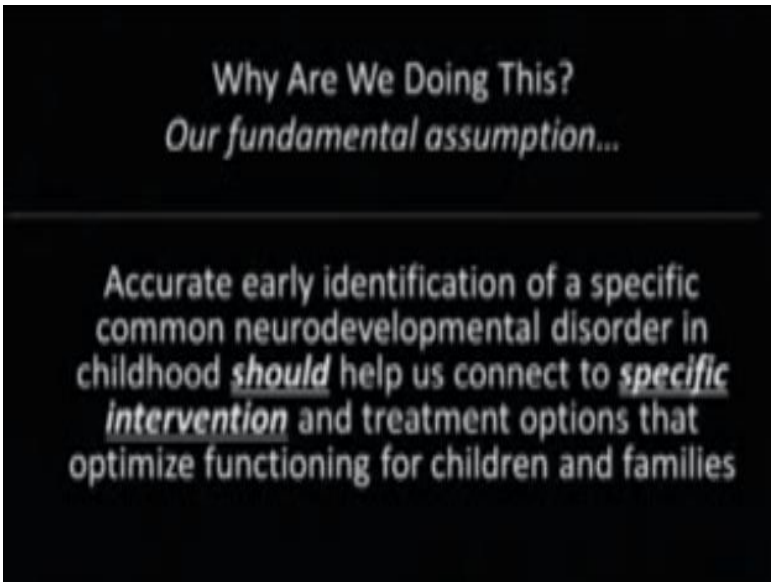

So assumption is accurate early identification of a specific neuro developmental disorder in childhood should help us connect to specific intervention and treatment options that may optimized functioning for children and families.

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So in 0.08 seconds these are the number of therapies which you get, if you type it in Google search look at it, some of them are general like auditory integration, sensory integration I told you with that cornels theory, applied behavior analysis and specific discrete trial, lovaas, holding therapy, dolphin assisted.

Whatever works vision therapy using the computerized vision tracking psychopharmacological, floor time, music therapy, social skills see you can just type and verify all this.

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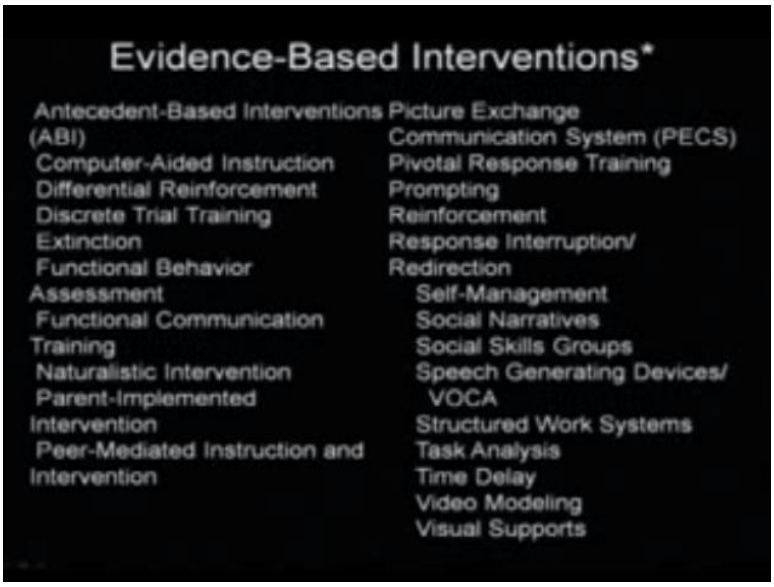

Evidence-based, antecedent-based intervention, computer-aided, discrete trial, extinction, assessment, functional communication, training, naturalistic intervention so just go through it some of them.

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If you want you can go and where does this leave us now, all this.

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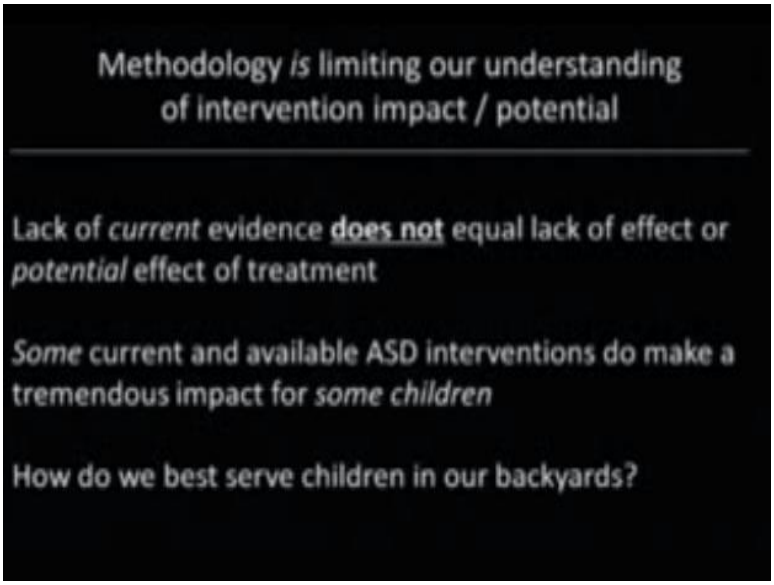

Lack of current evidence does not equal lack of effect or potential, effect of even that it does not mean that what is being done, because it has no quantification or definite relation to cause is not effective, it works. So people who say that autism is untreatable is not right effective ways of treating it.

But on the other hand people – there are some people who claim that they can cure autism physiotherapy or everybody is just a free for all market. So anybody who brings their treatments is claims, but science is still at one level does not believe all that clinical, because there is nothing else.

So but we should still be very, very aware of techniques that may harm the kid and because there is a lack of information so there is a lot of ignorance also. A lot of people do advise, people -- but good reading material is available on the internet also. So the advice which goes to the parent should be taken care of some interventions do make a tremendous impact.

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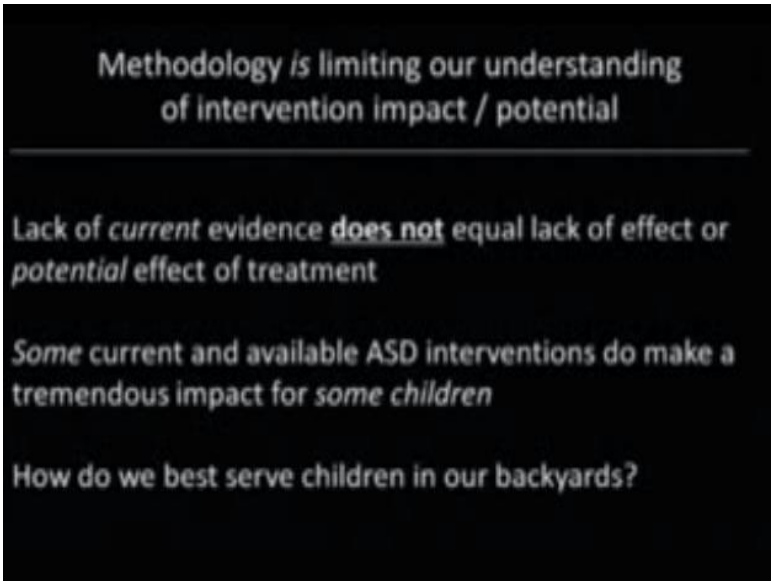

So how do we best serve?

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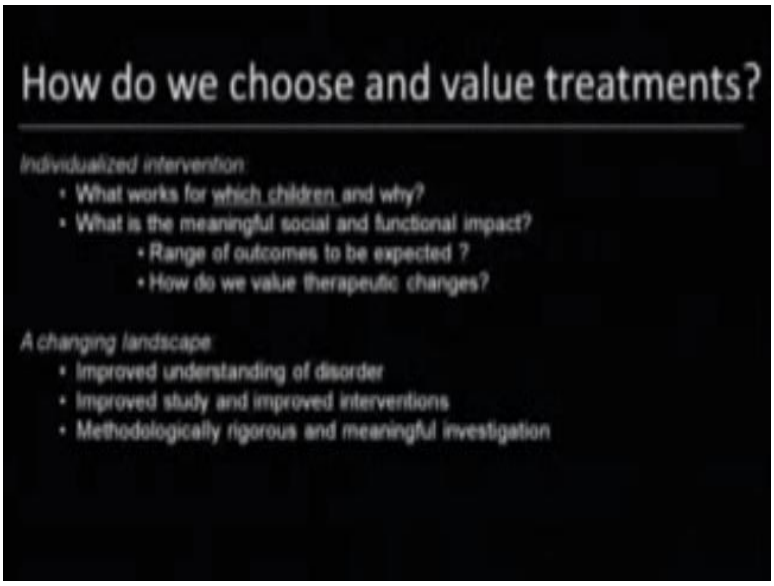

What works for which children and why? What is the meaning? Why are you training? What are you training? Are you training a kid to become independent? That has to go on with sensory integration, self-help skills. If you are seeing a child at 15, one should also be bother what outcome you are expecting there a child who can take care of himself at 15, but he is not working because of his lack of social skills and we do not know what the skill, the focus will be different.

Rather than focusing on real language acquisition and sensor integration what we should aim at helping that could find out of the specific skills that kid has and each kid will have it, developing a vocational training. And then compare that, so we are having improved understanding of the disorder, interventions and investigations.

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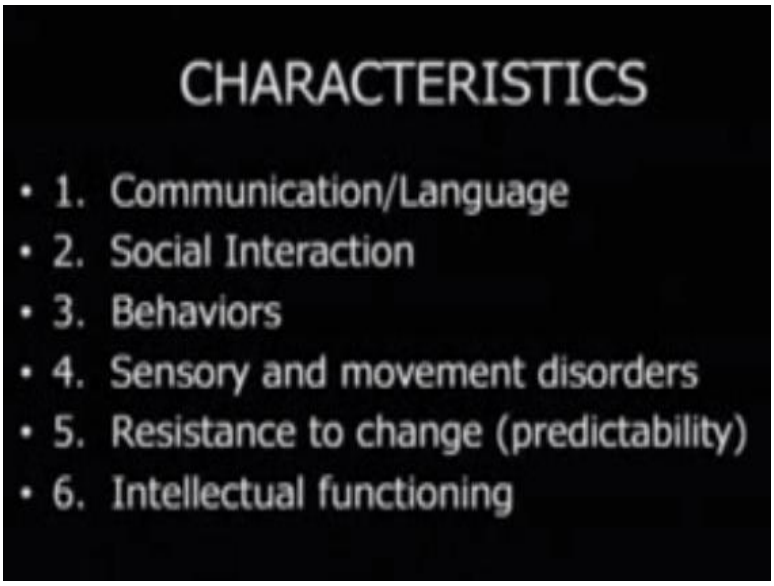

So again as I said just to reiterate these are the stuff which we have to really work with these kids.

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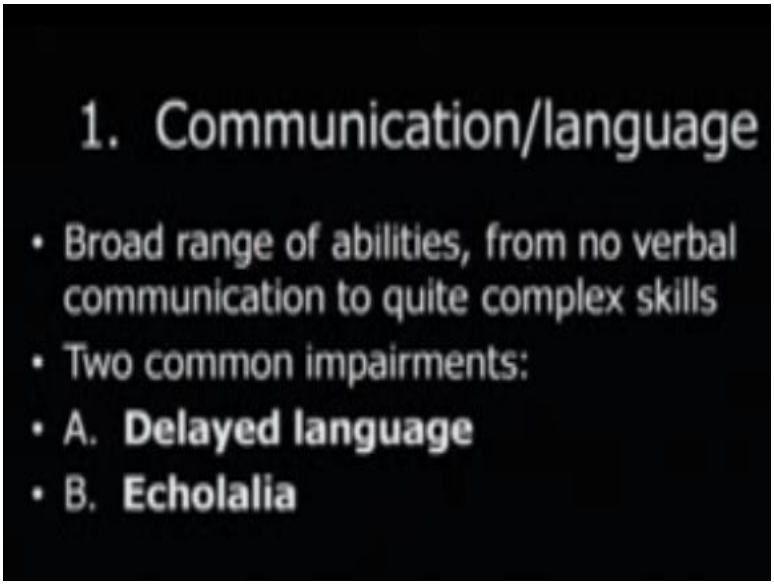

Again this is I will just.

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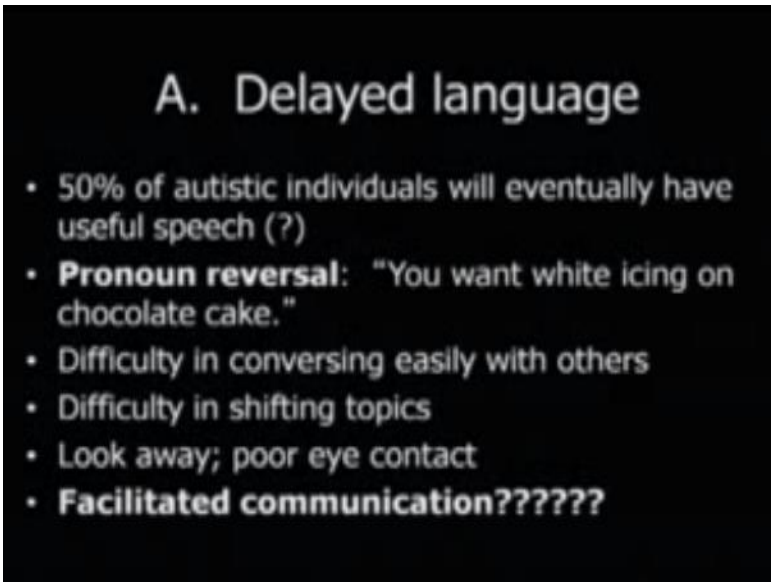

Skip through all this quickly you can just read it.

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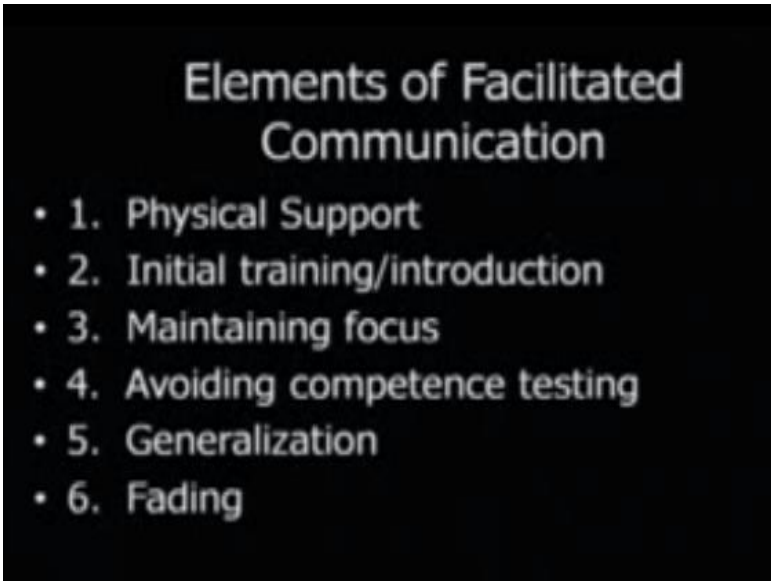

So these are the type of thing which we do, psychologist, occupational therapist.

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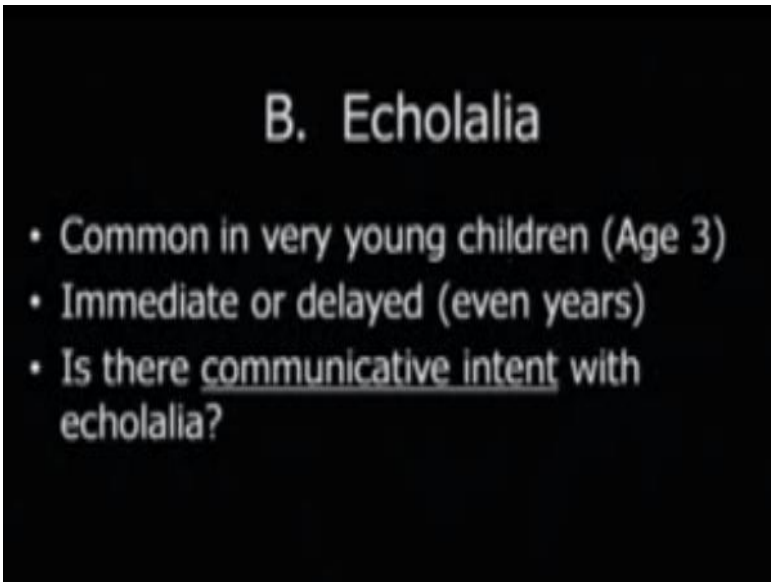

You can skip.

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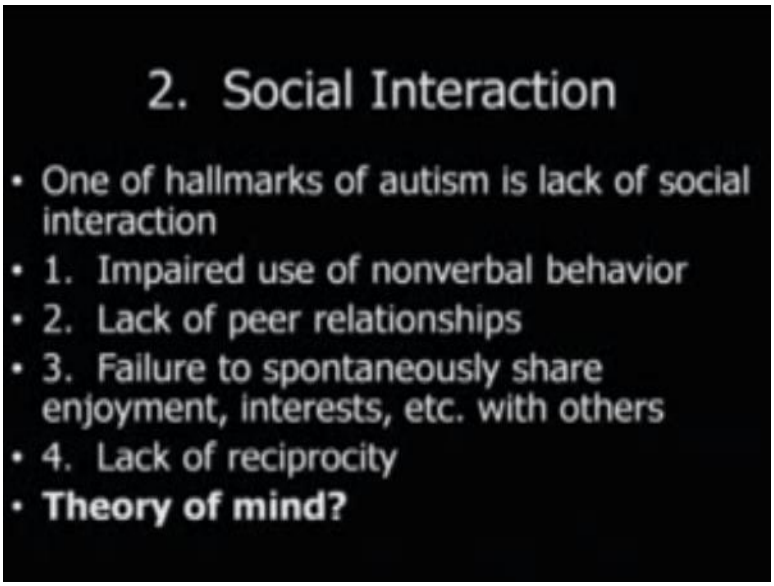

Some of these slides, this is important lack of social interaction, impaired use of nonverbal behavior, lack of peer relationships, failure to spontaneously share enjoyment,

interests, etc. with others. Theory of mind, theory of mind is, hence brought in the capability of human mind to understand thinking of the other mind of the other person in perspective to your own mind.

So that is what is considered to be lacking the autistic mind where is a paranoid schizophrenic takes every stimulus from the environment integrates into once own thinking and build principal delusion. The autistic mind is actually not taking any stimulus and it is responding to the internally generated stimulus more than anything else.

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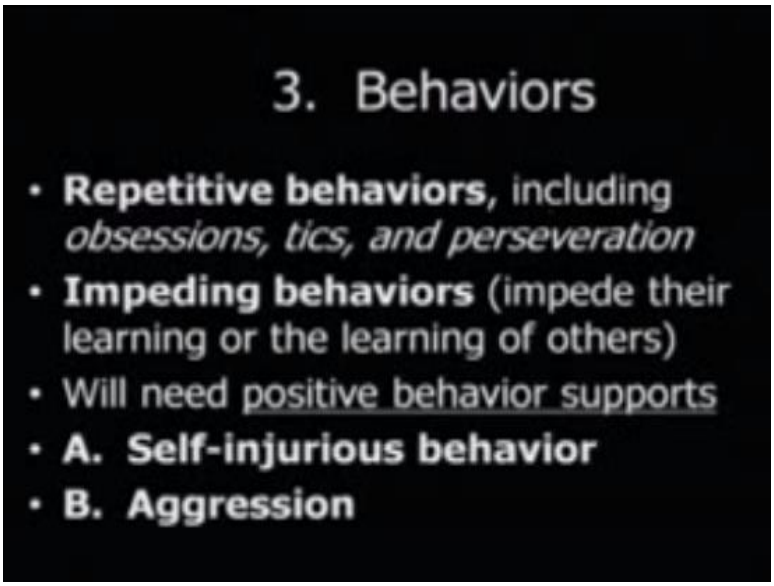

Behaviors like obsessions, tics and perseveration.

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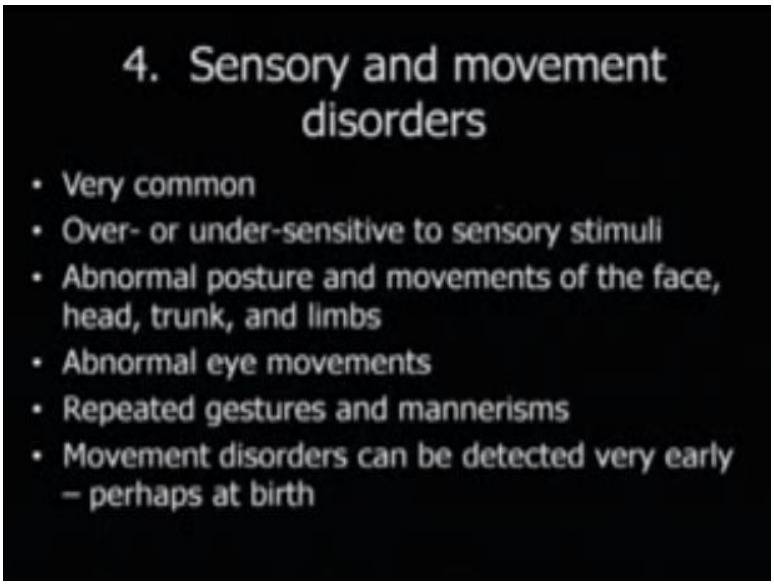

So we can see a lot of videos actually on you tube and Google here you can find out.

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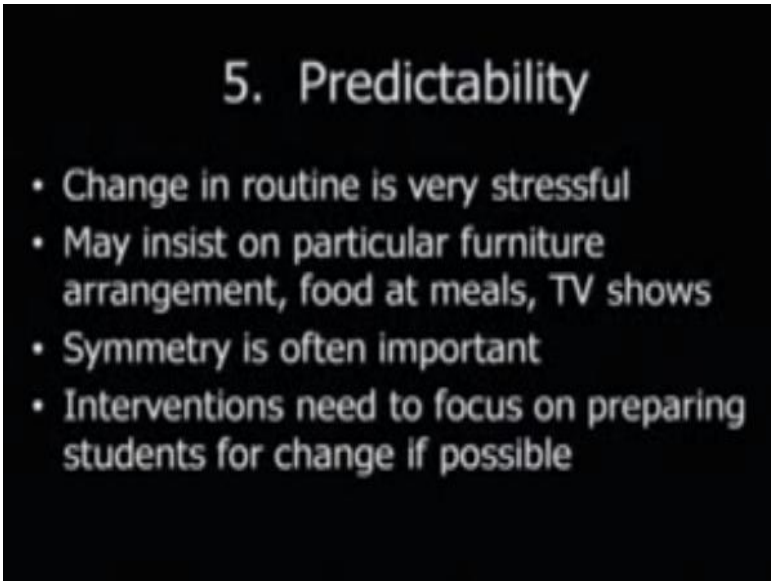

Change in routine is very stressful, may insist on particular furniture, food at meals, symmetry these if you look at it and if you remember what we talked about obsessive compulsive disorder, this thing will almost fit into that, but OCD again as I said, a person develops after having a lot of long normal life.

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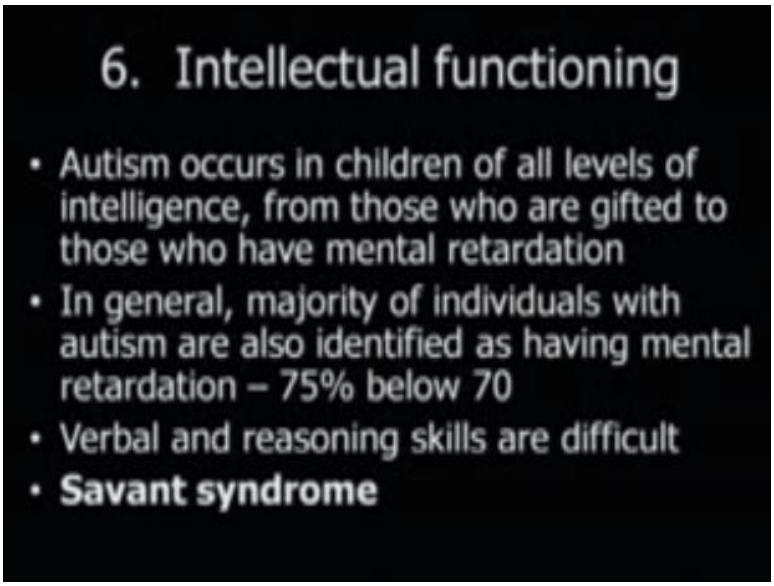

And this kids all levels of intelligence, those who are from gifted to those who have mental retardation. Savant syndrome I told you about idiots savants who have special skills.

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Treatment can be divided in two categories for core symptoms which address behavioral, developmental and educational needs. Other as occupational, physical and speech therapy they are not exclusive to disorders.

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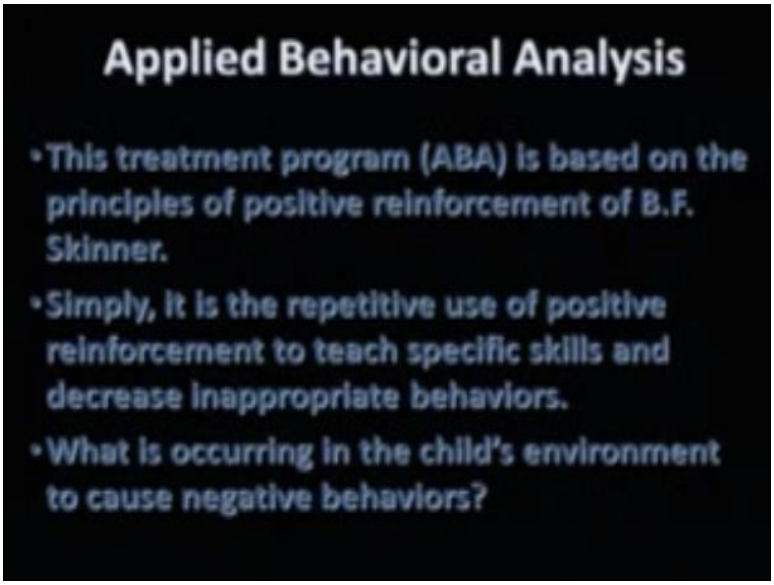

Applied behavioral analysis is one of the most common develop based on the reinforcement scheme of the Skinner. What is occurring in the child's environment to cause negative behavior, this is the most important point.

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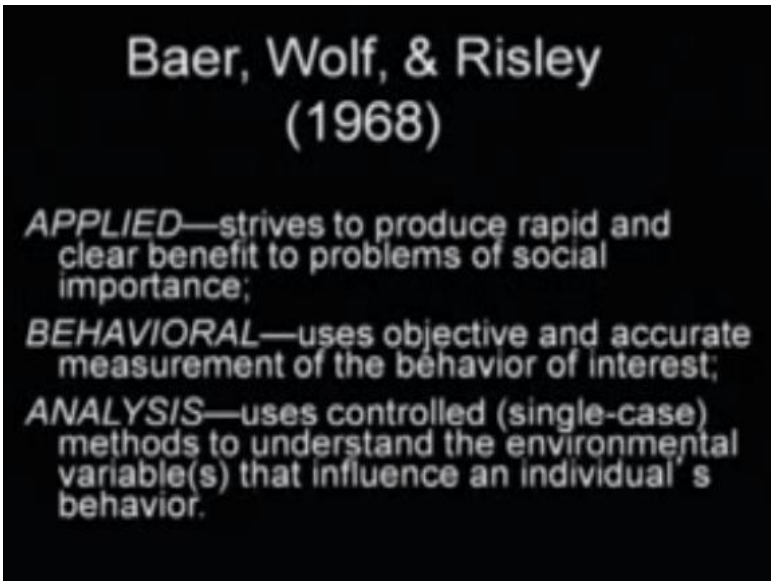

Again strives to produce rapid and clear benefit to problems of social importance, uses objective and accurate measurements and analysis.

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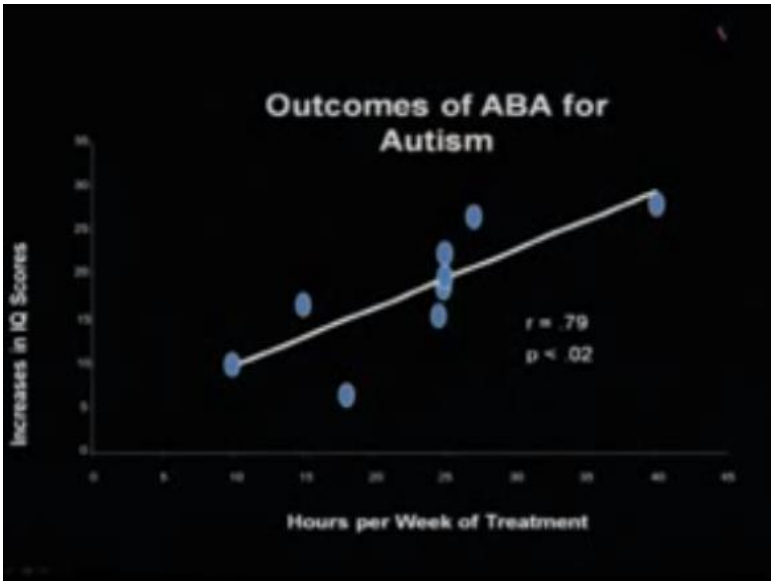

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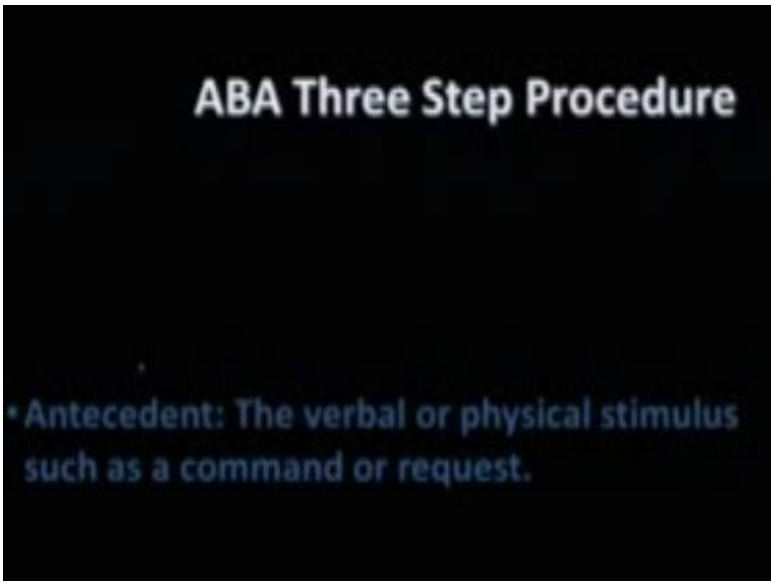

Okay anyway, I will stop at this, I just wanted to before we finish this talk, I wanted to basically again emphasize that what we are treating is a kid. Let me tell you what simple thing what I wanted to tell you, is that if you look at a normal trajectory which is going on like this, autism has its own trajectory that left its own, this autistic kid will also develop, he will also grow, he will also – he or she will also grow, have its own set of skills and intelligence.

But because it is not falling into that where normal life is being led, so what we are trying to do is by training till we do, till we know the cause and nor we developed medication or some other mechanism. By training we are trying to bring these kids to nearest to the mainstream. And this training, so you understood autism is going this way, it just trying to do this. But this can range from mild autism, high-functioning autism, where symptoms are less to core symptoms and, but the purpose remains the same.

They are -- we should allow them to be what they are, and we still train them to survive in the frame of the world by developing their skills, by intellect, by cognition, by language, and training these kids like you train any other kid. So it is not hopeless so I will stop at this and the next session we will talk about some other problem of children. Thank you.