Results of a large consecutive group of diagnosed autists, ages 2-24 years using dietary intervention (lutein-free)

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Introduction

World Community Autism Program includes in its founding statements the stated aim of seeing autism redefined as a treatable condition. In 1994, Sara Johnson started a journey to recovery after initiating a new diet, which came to be known as 'Sara's Diet'. Between 1994 and 2002, several thousand individuals with autism followed the guidelines of Sara's Diet. Although many parents reported results varying from improvement to recovery, we were usually not in a position to verify these results.

After the phenomenal results gained by the daughter of a Medical Doctor, we were invited to meet 68 autists whose families wished to implement Sara's Diet, plus one whose consultation was provided through his physician. After providing a one-day seminar to lay out the principles of the dietary approach, we visited the families, mostly in their own home and provided detailed dietary recommendations to each family. The families decided themselves to take part – we did not select the participants. Our only criteria for inclusion was a diagnosis of an Autism Spectrum Diagnosis – Autism, Asperger Syndrome or PDD-NOS. Some had used or were using a variety of other therapies, including GFCF diet, enzymes and supplements, Auditory Integration Therapy and Applied Behavioral Analysis.

The very nature of Sara's Diet requires that the recommendations are individually determined. There are many factors that we consider. These factors are, among others, medical history, physical signs and symptoms, history of development of autistic and other behaviors, family medical history, present diet, supplements and medications used, relationship to food and feeding, testing for food allergies and sensitivities and other testing as available. Pre-consultation testing was not required.

The only essential factors common to all diets is the total elimination of dietary lutein, artificial food dyes and Aspartame, and recommendations that aim to provide all known and suspected essential nutrients, preferably from foods but may be from supplements, taking into account that optimal nutrition is individual and varies particularly in the autism population. Other frequent elements of the diet might include: removal or reduction in intake of gluten and casein, soy protein, other carotene pigments, high purine foods, active dry yeast, MSG, excessive supplementation and return of some dairy fats and grains previously and in our opinion unnecessarily removed.

After eight weeks, the participating families received a questionnaire on their child's progress with the diet. Not all families returned the questionnaire. Of the original 69 individuals, we met 52 again to review their progress and update their diets as needed. 5 that we didn't meet again are still part of the group because we still have contact via email. We also met an additional 58 new participants. Their progress will also be charted and reviewed in future reports. This paper includes statistical data on the total study group, including family medical history, co-occurring conditions and other data we consider pertinent.

Purpose

Many times there have been reported information for the autism population which includes high instance of numbers among immigrant populations for persons diagnosed on the autism spectrum, high numbers of close family members who have autoimmune disease, high incidence of co-occurrence in families and also studies which try to identify if the placement in the sibling roster can give clues to help unravel the mysteries of this syndrome. Currently there are many controversies also surrounding autism and these include blame cast upon the pharmaceutical-military-government- political-industrial powers. In peer review literature there is lacking substantial information which has been overlooked as a genetic cause has been investigated. Medical information has been very limited and signs, symptoms and commonly co-occurring conditions may be under-reported. These include, but are not exclusive to, vitiligo, easy bruising, prominent birth marks, inborn errors of metabolism, visual impairment, hearing impairment and characteristics which include that some of these children are masters at escaping from protective environments. Parents who are coping with the autism diagnosis for their child are often, at some point, in a state of crisis, many are under pressure which most people who have no first hand

knowledge of autism fail to understand. Among the modern tragedies which are rising in addition to autism are Sudden Infant Death Syndrome and Shaken Baby Syndrome resulting in death. Signs and symptoms of either or both conditions can occur also as vaccine reactions and can include brain swelling, bleeding iris and swelling. Few medical professionals are prepared to understand vaccine related injury and death and even fewer are prepared to report it and face the scrutiny of their peers. Families who have lost a child often face investigations. When those families are faced with the threat of jury trial is it so difficult to understand also that a grieving parent who has just lost a child would not be in the most coherent frame of mind and would, in some instances, be ready to accept blame in return for their partner (spouse) not having to also face a trial by jury. Whether the infant or child dies as a result of some unknown cause, medical negligence or a real trauma which occurred when a determined child escapes from protective confines and ends up drowned or perishes in a hostile environment from cold, hunger or accident is indeed a tragedy. It is also a tragedy when families are further torn to pieces by the collective which has done little or nothing to prevent the crisis.

Background - The way to recovery

To aim for recovery in autism, we first have to identify the cause. We believe that the most common cause of autism is an immune system choice during fetal development which leads to the targeting of a dietary pigment, lutein, by the immune system. We have described how and why this happens, and the evidence for it, in our literature. This immune choice also leads to a cascade of reactions which differ according to various factors, (immuno-)genetic, environmental, family history, diet, and the inherent strength of the individual. Treating the individual means assessing all of these factors, designing an individual diet with supplementation if needed, and recommending additional interventions and supports based on how the individual is responding.

We believe that one of the most significant findings in autism is an immature development of the limbic system – the emotional-language-learning system of the human and mammalian brain – which results in delay or arrest in language and emotional development. We believe that the continual immune response to dietary lutein is registered by the amygdala – the central clearing house of the limbic system – as a panic (fight-or-flight) reaction. Learning cannot proceed as long as the emotional center is in a state of panic – the mammalian experience of immediate threat to survival. After approximately 12 days lutein-free, the immune system begins to calm down and we often see the first signs of improvement. It usually takes up to 16 weeks to see the first signs of an awakening of the limbic system, emotional expression and the availability for learning. This time frame is fairly consistent.

Once awakening begins, we assess where the individual is developmentally, and look at many therapeutic, educational, behavioral and sensory strategies which can bring about progress in these areas. This was the focus of many of the discussions we had with parents and professionals, as we plan the next stage in the recovery program.

Stages of recovery

Stages of recovery in autism have not been well defined. Currently some US government statistics include that as many as 94 percent of people with autism are unemployable. The individuals described here are in various stages of human development living within families who are also continually changing. The experience of each individual who has autism varies and is affected by their environment, attitude, treatment and is also subject to interpretation. Here we include some of the information obtained for a large study group. Findings have been published previously also which suggest a large number of individuals with autism are of diverse family backgrounds. The use of native languages in the home and, sometimes or often, two different languages which may also be different from the common language of the community where the families live may be a factor which has not been explored when looking at the difficulties of acquiring language for some of the autism population. Families who have a child or children with autism are also reportedly among the highest numbers of families coping also with other medical conditions and particularly those called autoimmune diseases. This would suggest also that some of these families are already under significant stress emotionally, physically and financially. Death, separation, divorce, placements of family members into psychiatric care, managed care facilities and residential programs as well as removal of children from the family into social services are among the circumstances which contribute to feelings of isolation and confusion which have been reported as some of the most horrific situations faced by individuals and families who are faced with autism. How these circumstances affect the individuals with autism and the disease presentation is not well understood. In the information provided here we describe some individuals who have had a diagnosis of autism; who have since the onset of the signs and symptoms used to define autism for these individuals, have reached a stage where the signs and symptoms are no

longer expressed or expressed to the same degree which resulted in the earlier diagnosis. How and why some people with autism can experience a reduction in signs and symptoms. overcome, cope with or recover from autism needs to be understood.

From delayed disordered to genius
We have met several children with autism whose testing included IQ scores achieved in the range of mental retardation and we have also met several who later obtained test scores which increased by as much as 100 percent and at least once by 200 percent. Six times over the last ten years I have known children with autism whose IQ scoring tests were repeated after substantial interventions were provided over the course of 6 months to one year and after the interventions were provided they were re-tested (3 times the individuals were retested by the same doctor who had performed the original evaluation) and the scores obtained at follow up took the individual from the severely impaired level to the genius level. More commonly for those who improve with use of dietary intervention is an increase of twenty five percent on follow IQ testing. It is difficult to test many of the children who have ASD and IQ tests are not always provided. It is important also to understand that people with autism are different, whether or not they have or had the label, something is different about the way we learn, experience things and relate to those experiences. Tests used to obtain a score for self help skills, cognition or motor skills do not always or often reflect the true potential of the individual with autism. Thus we have included here information describing some of the individuals which includes that many are hyper-focused, have selective attention, splinter skills and some are very good at creating diversions and attending to their own agendas as well as being able to escape from protective settings. One of the ways we learn is through success and repeated success. Children with autism often have an unusual relationship to food. When attention is selective and focused on food then learning to open a locked door to the kitchen can result in skills obtained which otherwise would seem impossible for a child performing at the level of skills observed in a test setting. Once the child can operate a lock and key system transferring the skill to the locked door or gate is a very real possibility. Among the individuals we have met was one recently who had five siblings, all older and most were in their late teen to early twenties. The parent and several siblings visited us in an arranged apartment for the consultation. With six adults concentrating on keeping the young man safe and contained he managed repeatedly to leave the area where he could be observed and obtain foods, escaped to the back enclosed porch and also explored all the rooms in the apartment. He managed to go through several purses, bags and boxes and was successful with each lapse of attention to his whereabouts to manage some task which he had planned. As parents attempt to provide therapies for their child with an ASD label the increasing skills experienced by some can also increase the difficulty of caring for these individuals. Cognitive skills appear to advance more rapidly than emotional maturity for those who indeed do improve with interventions. Often when dietary intervention is provided it is not the only therapy being provided. For those who have been reported as reaching the elusive goal of recovery often a variety of therapies have been included. For many I have personally known who had a diagnosis of moderate to severe autism and who later were declassified the journey often took several years. For Sara it was nearly five years from the point at which the dietary intervention was provided to the point at which she no longer displayed the signs and symptoms used to determine an autism diagnosis. Having said this the individuals described here have been generally provided some or many therapies in addition to the lutein free diet both before, during and after the dietary intervention consultation was provided.

<u>Results of Dietary Intervention for 48 subjects of the original group of 69 individuals.</u>
From the original group of 69, we presently have follow-up reports on **48** individuals who have maintained dietary intervention for not less than four months. 10 who did not begin immediately are moved into the later starting group. One we know of has dropped out. This leaves 10 for which we have yet to receive any detailed information.

<u>Information on results of dietary intervention for 48 individuals.</u> Among the parents reporting information for this group are eight medical doctors.

Female 6 of 48 participants
Male 41 of 48 participants

<u>No longer meet the criteria for an ASD diagnosis:</u>
9 individuals who were diagnosed as ASD report few or no remaining symptoms. 1 female and 8 males.

1. Male is not of diverse ancestry. He is the oldest of 3 children and diagnosed as ASD. He began the lutein free diet at age **6 years and 6 months.** When we first met him, his families main concerns were: he was not involved with his family. He had no clear sense of danger. And spent most of his time self-entertained, spinning toys and obsessed with water. Parents were convinced that he would have to have a shadow in order to enter school, which was to begin at age 7. When we met him again after 6 months, he appeared as a typical 6 year old, quiet but able to communicate verbally. He was no longer limited to his own yard and was able to ride his bicycle freely in the neighborhood, socializing with children of similar age. He joined us for the meal, whereas during our first visit, he did not come near the table during the meal. He had begun school without an aide and was reported as self-managing his lutein-free diet at school. We recommended movement therapy or activity with age appropriate peers.

2. Female is of mixed/diverse ancestry. Observations pre-diet included: poor facial expression, didn't raise eyebrows, upper lip appeared as numb. She was described as self-entertaining, chooses to be alone, unconcerned, echolalic, pacing, obsessed with buttons and knobs, and carrying a comfort item. Infancy included reported difficulty with breast feeding, vomiting, refusal of solid food. She is reported to touch and smell food, spits out food, as tense at mealtimes, won't come to the table, tantrums. Has seizured during and after mealtime. She is described as having fear of some sounds, covers ears regularly and hums. She does not participate and lacks separation anxiety. She appears unconcerned and unresponsive and has a high tolerance for pain. She is described also with no speech., splinter skills – completing puzzles and laughing for no apparent reason as well as having problems with attention and safety. She is stout, but not fat. She began lutein free diet at **age 3 years, 11 months.** When we first met her, she was totally self-absorbed, very controlling of her food, which was kept separate on a trolley. She ate only finger foods and only foods that were pre-packaged. Natural Vegetarian. When we saw her after 6 months lutein-free, she was playing with age-appropriate toys, joined us at the table, she enjoyed her food and a much wider variety of foods. She displayed none of the original autism characteristics. She was verbal using three-five word combinations and able to count to ten. She appeared as happy, smiling and sociable. Parents were providing a pre-school in home program.

3. Male is not of diverse mixed/ancestry. Family reports he was difficult to conceive. He is a late in life baby for this couple and an only child. There was no reported birth trauma. The newborn did have jaundice. He displays prominent vitiligo patches. He had been strict GFCF diet prior to lutein-free diet consultation. His symptoms were reported as greatly reduced prior to the consultation. Parental concerns were that he might not be able to go to regular school. He was self-absorbed, avoided interaction by gazing out of the window. He was reported with food related anxiety and preferring a self-limited diet. He was described as prone rashes and blisters type skin eruptions, contact allergies, allergic shiners, sensitive and dry skin. He began lutein free diet at **age 6 years.** At 6 month follow up: The rashes had cleared up, relationship to food and appetite had improved, he attended regular school where he managed his own diet, the school was not told and did not suspect his former diagnosis. Excellent at school, and on grade level.

4. Male eldest of two children. Diagnosed with a co-occurring inborn error of metabolism. He was delivered by caesarian section after a difficult labor. Before implementing the lutein-free diet he reportedly lacked facial expression, did not make eye contact, chose to be alone, was self-entertaining, communicated through temper tantrum, and speech was mostly confused and incoherent babbling. He could say 'baba', and 'papa'. He engaged in jumping, pacing and hand-flapping regularly and was obsessed with water and specific objects. Self-stimulation was described as well as unresponsive at times and he fixated on visual stimuli, abnormal sensory inspection of objects – mouthing and smelling. He didn't like to be touched or hugged, made screeching, odd noises and was reported as irritable. He began dietary intervention at age **3 years 11 months**. 8 week re-evaluation: stools yellow and soft, self-stimulation (genitals) stopped. Affectionate, progressing well, no longer fixating on visual stimuli. Playing with saliva. Approaching but not interacting with brother. 16 week re-evaluation: No longer meets criteria for an ASD diagnosis according to his neurologist, psychologist and geneticist. Happy, eating extremely well, gaining weight, interacting and playing with brother, reported as meeting almost all developmental milestones.

5. Male is of mixed/diverse ancestry. The middle child of three children. There was no birth trauma reported and he did not present with newborn jaundice. The individual presented with café au lait birth marks. He is said to have had easy bruising and frequent otitis media in early childhood, also eczema and diarrhea, profuse sweating, stopped progressing and lost speech at age 2. 'In a shell and fading'. Long crying episodes, likes spinning wheels and spinning in circles, lost spontaneous eye contact. Still

able to stack blocks. He began dietary intervention at age **2 years and 6 months.** Review after 5 months lutein-free: we saw no signs or symptoms of autism. His parent (a medical doctor) confirmed alleviation of symptoms.

6. Male is not from mixed/diverse ancestry. There is no family history of disease, disorders or conditions reported. He is said to have been difficult to conceive and is an only child. He has co-occurring condition of asthma. He is reported to have presented with newborn jaundice. He displays prominent café au lait birth marks. Ruby red lips, food and feeding issues. When we first met him, he was squinting, very sensitive to sound, didn't want to be disturbed, withdrawn, giggling for no apparent reason, and had a very limited use of words. He began dietary intervention at age **4 years and 11 months**. 8 week review: More aware of surrounding and therefore he is a bit more timid to venture out on his own. He is also able to express himself especially when he is afraid, angry and happy. He is even afraid of flies, butterflies and mosquitoes. His eye contact had not improved when he was on his gfcf diet. Sometime he needs to be reminded to look at our face. Began to make short sentences and able to pronounce certain more difficult words such as possible, my name, some television characters, etc. More vocal and can pick up the national language. Can be quite moody at times. When he is happy, he still will stiffen his muscles generally and does not control movements at times. He is able to tell you that he is afraid, angry (by crying out loud and calling for me) - quite a lot of improvement. Wants to socialize with younger children and adults and still afraid to be in a crowd. He has no self confidence to try to explore new things. Only willing to go to places if I am around and always want to be around me in strange place. Movement and body language improved for I am able to tell that he needs to go to the toilet, angry, afraid, sad and happy. He began to enjoy playing with the computer and he is learning how to use the mouse, he is able to watch television and he appears to understand them for he laughs appropriately at the right time. Loves to throw balls, and look at the numbers and arrange them accordingly. Knows his alphabet. He is still obsessed with his security toys which are his Mickey mouse and a security blanket. He still wants to drink milk in the morning and before he goes to bed. There is no other apparent obsessions. Lately it has been quite difficult to get him to finish his food. He began to develop a dislike for fish and prawns. He loves to eat rice even just plain rice. Appetite not as good as before. Still sensitive to certain sound such as drilling sound, loud banging sound, the sound of rain drops. Light sensitivity – he does not have any problem in this area although he prefers to have the small table light on when he goes to bed. Stool: yellowish and not as smelly as before. He has rashes on his abdomen. Weight as skinny as ever. Fever only initially. Other health signs: he still has his asthma attack though it is controlled as he on his inhaler. Review 16 weeks: When we saw him the second time, the red lips had faded, he appeared as a very normal little boy. He stayed at home playing when his mother took us shopping. Ate with us at the table, was timid conversationally. Happy, no unusual behaviors. Socially immature. Playing appropriately with books and toys. Parents now believe he will go to regular school. Rashes have disappeared, stool is normal.

7. Male is not of mixed/diverse ancestry. He was born through C-section delivery. Pre-consultation description included visual fixations, itchy eyes, self-entertaining, tantrums, single words, plays same segment of video over and over, sometimes refuses to move, jumps, hits self, beats head repetitively, water obsession, touches and smells food, doesn't chew, refuses many foods, clicks tongue, squints, obsessed with prisms and rainbow colored lights, only wants to wear velvet, plays with genitals. He began dietary intervention at **age 5 years**. Lutein-free but not wheat or dairy-free. 8-week review: more hyperactive and playful, not keen to sit down at table to finish meals (used to be bad 1 month ago but not so bad now), biting fingers and objects such as stuffed bear and toys (rubber tires of toy cars) – still at it, sucking toes, more responsive towards social instructions. Eye contact good – occasionally comes to look at you right in the eyes. Speech: more spontaneous communication and joint attention. Mood: weeping for no apparent reasons on 2 occasions. Tends to whine and show short tantrums when refused things (snacks or VCD).Giving a playful smile more often. Louder voice occasionally; clucking his tongue with higher frequency. Sometimes sings to himself (but not meaningful words). More playful with sibling and parents, still ignores other children. More responsive and compliance to social instructions. More pointing for joint attention. Started to pick up toys to play. Can sit and play some computer games to the end. Before, he will switch to other games half way. Obsessions: No change. Relationship to food: Didn't fight to eat oranges and white bread when refused – used to like them very very much. Not so keen on cakes and biscuits as before. For cakes, he tends to go for the icing only. Appetite: Generally good, but tends to fight off initial servings at meals. Sound sensitivity: no change. Still prefers loud sound when playing VCD on computer. Light sensitivity: no change. His bowel movement has improved tremendously. Move bowels almost everyday. Well formed and dark brown colour. Used to do it only once a week at the beginning of diet. Weight: Did not record but has

increased noticeably. Fever: None. Other health signs: rhinitis. 16 week review. When we met him again, he was a totally different child. Happy, relaxed, no stress, expressive face, talking, brought his work books into the kitchen so that he could be with us. Engaged in meaningful play and age appropriate academic activities. No more conflict over food issues. Interacting appropriately with his cousins. His father cried as he told us his son was doing things he never thought he would be able to do.

8. Male is of mixed/diverse ancestry. He is reported to have presented with newborn jaundice. No family history of diseases, disorders or conditions is reported. When we first met him, he appeared to have difficulty with visual perception – he appeared to be using the wall and railing of the stairs to walk. He appeared as angry, clumsy, non-vocal, with glassy eyes, puffy (swollen), pacing, sound sensitive, withdrawn. He appeared to be frustrated in his inability to express himself. Uninterested in toys. He began dietary intervention at age **6 years 6 months**. 8 week review: Behavior – as usual but I noticed that at the initial stage when he was on the diet he liked to touch his genitals. This, however, has improved. He appears to play 'pretend' and imitate actions. He does have eye contact but sometimes does not bother to look at the person, appears to being able to construct new sentences. Occasionally imitates sentences from television or others. Appears to be more responsive when taught to construct a sentence in its orderly manner. He is alright to have dinner outside, to shop except when he wants something from a certain shop – he can be adamant. Facial Expression – Nothing unusual but does have the tendency to look up. Vocal Expression sounds natural at times but sometimes tends to sing-song (imitate the exact way from where he heard it from.) Social Relations – tends to look for his cousins or want to visit them. He does not mind listening to music and even dances to the music when asked to. Enjoys doing puzzles. Doesn't like the sound of 'school/ study' but would do certain task after a while. Seems to appreciate various toys now. Relationship to food – I know he loves eating cheese, pasta, bread, cornflakes (these have been put on hold as advised). In general he is choosy over food. Loves to smell first. Appetite – as usual. Sound sensitivity better. Less sensitive to sound. Willing to move/dance to music. Urine, as usual but lately before going to sleep he would want to go to the toilet at least twice. At the initial stage (on Sara's diet) he seems to have rashes on his leg. Now they have disappeared. Weight – parent says lost weight since on the diet. 'He did have fever when we for holiday. Not sure whether it was the diet or the rash'. 16 week review: when we saw him again, he expressed clearly that he wanted to go to the mall. (this is an only child. Normally, when Dad is home, he will take the family out, so our visit on father's day off delayed his trip to the mall.) He negotiated and was satisfied that they would go out after our visit. He behaved well, was charming, confident, interactive, happy, conversational, not clumsy, not puffy, no longer holding the walls, playing happily with dinosaurs.

9. Male is of mixed/diverse ancestry. He is reported to have had ear-block with smelly ear discharge in early childhood. There is no family history of diseases, disorders or conditions reported. When we first met him, he was angry, his primary focus was on food, he had been rejected from one school placement. He had been evaluated and determined as typical autism with mental retardation. He created chaos, demanded food, did not follow any instruction, was very hyperactive, aggressive, destructive, screaming nonsense phrases and demands, bullying, demanding, no sense of danger, clumsy, preferred to be naked, never stopped moving except when alone in room with TV. His mother was crying, frantic, Father described him as 'A wild man'. He began the dietary intervention at **age 6 years.** We met him again after 6 months at his school. We were not expecting to see him (we were there on other business), but as we walked in, he turned around from his desk and called out 'Hi Sandra and Max'. Later, at his house, he was working on his father's computer. He was working on four different programs simultaneously – a interactive encyclopedia, a game, a language program, and one other. He also had the TV on next to the computer, and from time to time went to check through the channels. His father said that he had been re-evaluated by the same professional who had been using him as an example to teach psychology students about the presentation of typical autism with mental retardation. The team retested him thoroughly and could now find no symptoms of autism, but his IQ now tested at genius.

8 week to 16 week evaluations for remaining participants:

10. Male is not of diverse ancestry. He is the younger of two children. He has received OT therapy and ABA. Pre-consultation description includes; doesn't raise eyebrows when surprised, chooses to be alone, social interaction initiates slowly after trust has been established, single-words and short sentences, confused or incoherent babbling, does not reciprocate conversationally, fixates on specific

videos, TV programs: TeleTubbies, jumps, moves fingers in front of eyes, repetitive touching of objects, people or self and must carry a comfort object. Refuses to eat: vegetables (raw or cooked), clicks tongue, does not participate, does not initiate, does not go first, lack of separation anxiety. Picking at skin. Love of movement, frolic play, tickling, climbing, rocking, swinging, Abnormal sensory inspection (e.g. scratching, rubbing, visually scrutinizing objects or fingers close to eyes), High tolerance for pain (e.g., not crying when hurt), developmental regression or slowing at approximately 1.5-3 years of age. Visual and motor skills higher than expressive and receptive language, atypical vocalizations such as unusual voice quality or modulation, screeching, odd noises, repetitive vocalizations, echolalia, sporadic speech, mood changes sometimes internally triggered such as becoming upset for no apparent reason, laughing or hysterical laughter for no apparent reason – seldom. Unresponsive in some situations, problems with attention and safety, hyper-focused on activities, objects, or topics of interest to self and inattentive at other times. Unusual stool color: Yellow. Upon first meeting this young man we recommended AIT, allergy testing and testing to determine if gut parasites were present. He began dietary intervention at **age 5 years.** Follow up after 8 months lutein-free (maintain GF, return of dairy fats): He was evaluated by an AIT therapist who recognized total deafness in right ear and partial deafness in left ear. He received AIT which was completed just a few days before our return visit. Improvements: Movement better, Some improved eye contact. Speech: experimenting, some-few words, occasional screams, still confused babbling. Mood: Happy. Facial expression: Smiling. Vocal expression: clear. Social relations: occasional contact. Improved muscle tone. Activity: Much movement and playing. Light sensitivity – recommended visual screening. NO MORE mosquito bite like eruptions on skin, no longer picking at skin. Not as floppy. Recommended foot reflexology and stool analysis.

11. Male born by C-section. Marks appeared at age 2 – café-au-lait and vitiligo on face, café-au-lait on back of shoulder and lower back. Jaundice. The subject is small for his age, possible trichothiodystrophy (not screened). Began dietary intervention at age **4 years and 2 months.** 16 week evaluation: Reduced anxiety, better relationship to food, some spontaneous speech - rare. This young male has an unusual presentation and missing family history information. We suggested a genetic screening.

12. Male is youngest of two children. Pre-consultation information includes: Frequent flu, colds and cough, allergy and rashes to fish and anchovies. Plays with genitals whenever he is on antibiotic. Fear of sound, crying and quarrelling, covers ears regularly, stands and stares at the window, does not share or participate, initiate or go first, lack of stranger and separation anxiety, focuses on very small objects, abnormal sensory inspection, presses objects against face and body, tactile defensive, refuses to wear pants, socks or hat, sleep disturbance, feeding disorder, fear of food, no speech except saying the alphabet, creates diversions and engages in self-selective activities, distressed by interruption, fear of walking on the street, steps, new TV programs. Parents describe skin tone as uneven dull and dry, and produces body odor since birth. ABA since July 2002, result: slightly more compliant. Started dietary intervention at age **4 years and 3 months.** When we first met him, the right eye was turned in, skin looked ashen, and face pale. 16 week evaluation: Improvement in posture, eye contact, concentration. More relaxed, able to sit for longer periods of time. Better skin tone, no longer ashen.

13. Male, normal birth, eldest of 2. Pre-consultation information included: Remained in hospital with severe jaundice and low blood sugar. Unable to breast-feed, colic, changed to soy formula, then to hypo-allergenic formula. Had some words. Tried speech and OT but were discontinued after 2 months, as he was unable to settle down. Hospitalised multiple times in infancy for high fever. Large head circumference. Does not raise eyebrows, both eyes turned extremely to the right. Fear of mechanical noise, makes tapping noises, stares out the window, likes to watch colored lights, demands sameness of routine, does not participate or initiate, lacks stranger anxiety, love of movement, abnormal sensory inspection (mouthing and scratching), chooses to be alone, self-entertaining, temper tantrum when routine is changed, no verbal language remains, confused and incoherent babbling, does not point, extensive memory of single syllable picture-word cards. Very fast sudden movements, never stops moving, jumping. Sometimes hits himself. Obsessions are water, certain foods and routine. He began dietary intervention at age **4 years and 6 months**. 8 week follow up: Parents report: 'He's more happy and loves to play with his father. No more bed wetting at night. Sleeps well unless he eats the foods that he can't tolerate, which either keeps him awake and playing or crying. Eye contact: improved and he shows some interest in watching TV. More hair growth and dark in color. 16 week follow-up: eyes much more normal in appearance, happy, quiet and playing. Making new single syllable words. More aware of surroundings, rash and allergies gone, growing and eating well.

14. Male from diverse family ancestry. Café-au-lait marks, forceps delivery, frequent otitis media, eldest of 5. When we first met him at age 12, he was timid, tense and shy, non verbal, described as liking food, drawing, and riding in the car. He attended special school and did well. He began dietary intervention at **age 12 years**. 16 week evaluation: Conversational. Relaxed body posture, riding bike in yard, headstrong, self-confident and demanding, power struggling with everyone. Having difficulty with aggression, puberty, changes to school environment. In a vocational training program. He is reported and observed to have become more controlling, manipulative and aggressive.

15. Male is youngest of three. Pre-consultation information includes: Likes to spin objects, eats non-food items such as tissue paper. Mouths everything. Fear of noise, hums, plays with saliva, unresponsive at times, distressed with commotion or crowds, tactile defensive, high tolerance for pain, sleep disturbance, no speech although he previously had a few words. Often agitated, mood changes for no apparent reason, laughing for no apparent reason, bites, diarrhea for no apparent reason. Male child began dietary intervention at age **2 years and 6 months.** When we first met him, he made no attempt at contact, mostly he sat on the edge of the couch sometimes rocking slowly. He was almost invisible. He was eating tissue paper. When it was taken from him, he screamed. No eye contact. 8 week follow up: Behavior not consistent. Biting (people) is less now. Alertness is more, he seems to be aware of things around him. Laughing for no apparent reason is still there. Humming is a lot more now. Eye Contact Improved. Speech - Babbles a bit, not consistent Mood - Non consistent, Whining is still there. Sometimes, I felt that he's bored. Still likes to play on his own. However, less complaint when he is with a crowd. Quite a number of inappropriate behaviors - does not play with toys appropriately. Gesture is more. Pulls our hands and takes us to the place that he wants us to do something. Obsessions - Kitchen is his favourite - always looking for food!!! Likes to munch. Relationship to food - Cannot wait. If we are late in feeding him, then he will stand immediately on his chair and grab the food on the table. Appetite - Very good - always hungry. Sound sensitivity - Did not recognize or show any action when we call his name, but responds immediately to plastic bag sounds, or to the sound of opening the fridge. Stool - From gray has turned into a bit of yellowish. Urine - There will times that he will urinate every 0.5 hr or times that not even once in 2 hrs. Hardly have fever. 6 month follow up: when we met him again, he was playing appropriately in a small child's gym area set up in his living room. He came to the table, made eye contact, reached for food, smiled, and returned to play.

16. Male is the oldest of two children. Vitiligo patches on face. Began dietary intervention at age 4 years. When we met him, he was suffering from severe candida or yeast overgrowth and our initial recommendations focused on anti-candida diet and other anti-yeast therapies. Parents also report ear deposits. He was lying and rolling on the floor with his body rubbing up against couch or pillow or the floor. He was evidently in great discomfort. He did make contact and came to where we were, but no speech. He occasionally jumped and was said to be entertained by videos for brief periods. He preferred to avoid sweets, although he was offered them. He had no interest in vegetables and most fruits. He was indifferent to his younger sibling. **Follow-up after 6 months:** He was sociable, charming, smiling, had his photo taken together with his sibling. Speech sounds and babbling. Playing with toy trucks. Mother said he could sit through a whole cartoon video, was less moody and more sociable, and was doing jaw exercises which he devised himself.

17. Male is oldest of two boys. Pre-consultation information includes: C-section delivery, birthmarks, vomiting in infancy. Visual fixation on light, dreamy smile, worried or concerned look, lacks reciprocal interaction, expresses desires through tantrum, single words, fixates, moves fingers in front of eyes, repetitive touching of objects, obsessed with numbers, fear of noises, picks at skin, love of movement, unresponsive at times, abnormal sensory inspection, atypical vocalization, screaming, laughing for no apparent reason, splinter skills. Yellow and smelly stool. Began dietary intervention at **age 4 years and 2 months.** 8 week evaluation. He is reported to have increase in tantrums, better eye contact and speech - at his best ever. Mood is reported as sometimes stable, sometimes on a swing. Facial expression better, also seems affected by other's feelings e.g. scared when parent is angry. Vocal expression better – louder and clearer. Social Relations best ever – sharing and joint attention. Obsessions worse. Relationship to food better. Appetite better. Sound sensitivity – able to tolerate better. Stool now daily instead of the previous chronic constipation of once in 5 days. Weight increase. Other health signs: dark circles under eyes disappeared and reappeared and disappeared. Slight rash at back of legs (around 8 weeks after start diet). 16 week follow up: behavior described as a bit rough, pushing younger brother. Speech using 4 word combinations such as 'I want ginger ale', making

choices. Sound sensitivity now mild. Made his own vibrating chair by placing cushions on the foot massage machine.

18. Male has also a diagnosis of oligodendroglioma tumor. This was not addressed by surgery and the tumor has not been observed to change or grow. Pre-consultation information includes: During infancy, always sick and cold. Given lot of antibiotics. Atopic eczema, rashes and impetigo, large head circumference, diagnosis: mental retardation and autistic features. Eldest of two children. Severe dust mite allergy and multiple food allergies including egg, dairy, nuts, meats, wheat. Refuses vegetables, vomiting in infancy, difficulty swallowing, feeding difficulties. Doesn't raise eyebrows, dazed or blank expression, uncoordinated eye movements, eyes appear to look in different directions, squints, limited ability to control facial muscles, upper lip appears as numb, echolalic, single words, incoherent babbling, can use a meaningful phrase when he wants something badly. Loves magic and English. Walks like jello. Jumps, rocks from forward to back, squeezes his thighs and hums, moves away from noise, loves books, when he's doing something he can do it for hours and hours. Fear of mechanical noise. Plays with saliva. Likes touching genitals. Unresponsive at times, distressed by trees, grass and flying insects. Abnormal sensory inspection (bites and scratches), tactile defensive, cannot bear labels in shirts, dislikes wearing clothes, having faced washed, teeth brushed, sleep disturbance due to itchiness, atypical vocalization, odd noises, splinter skills, unusual fears, no attention to safety, aggressive and unpredictable. **Started dietary intervention at age 4 years.** When we first met him, we found him to be a very determined, but frustrated by his condition. He was making determined efforts to speak, communicate and be sociable. He had very little hair. <u>16 week review:</u> He has made tremendous improvement with dietary intervention and is said to be able to complete age appropriate level school work but with increased allowance for time to complete assignments after implementing the dietary intervention. Stool brown and formed, skin is good, rashes and itchiness are gone. Hair growth is good. No more sound sensitivity. Still totally involved in books and work, but much more relaxed and able to complete his tasks.

19. Male is the youngest of two children. During the first consultation we recommended gluten free and casein free based on child's significant preference for these foods and otherwise very self-limited diet. Parents subsequently obtained testing which did not show allergy to gluten and or casein. Thus they chose not to include gluten and casein free recommendation. 8 week communication includes: 'Basically our son (5 years old) is not on CFGF diet as his test show he can tolerate them and he is not 100% on Sara's Diet either as he is not taking the required amount of two fresh and two cook veg daily. He still refuses to eat veg by itself, so we have to cook the veg in soup and that we make sure he drinks the soup daily (for lunch and dinner).' <u>8 week review</u>: Question: Which foods and supplements have you removed since the consultation? Reply: We have removed eggs, efalex, slowly reducing the soy protein milk powder and yeast bread. Question: Which new foods have you successfully added to your child's diet? We have added white veg, parsnips, onions and garlic to his soup. He still does not want to eat veg by itself, it has to be boiled into soup and he will just drink the soup. We make sure he gets the soup everyday. He is also taking peeled apple and banana twice weekly. He does not eat it everyday though we tried to give it to him. He is very selective. The new supplements we gave is cod liver oil, fish oil, evening primrose oil, safflower oil, soy oil (gosh, they are all oils!). Question: List the foods that your child now eats regularly (daily or weekly). Reply: Vegetables – parsnips, cabbage, onion, garlic (all mixed in soup) – daily. Fruit - apple, banana - 2 or 3 times a week.. Oils - fish oil, cod liver oil, safflower oil, daily. Snacks - wheat biscuits, potato biscuits, sweets, ice-cream, white bread (with yeast) – daily. Cereals - no more, he used to take corn flakes, now we stop him since it is yellow corn. Other - peanut biscuits, junk food like twisties, potato chips. Question: Which supplements is your child now taking?
Reply: DMG with folic acid, fish oil, cod liver oil, zinc, EPO. Behavior - sudden shouts and temper tandrums, short attention span. Eye Contact - no improvement. Still not looking when talking to him. Need to hold the head to look straight, notice that he is looking at things not directly but always at a 45 degree angle. Like when he is on top of the stairs, he will look with his eyes glued next to the rail handle and will move slowly down the stairs with the eyes still glued to the handle or very close to the hand railing. He was not like that before the we change to Sara's diet. Speech - Has more words now but must be prompted to say them. He would only say voluntarily when he needs his milk and when he wants to go out. When he needs his milk, he will say 'I want milk' and when he wants to go out, he will say 'I want, come' and he will pull our hands. He can also say 'up' when he wants us to take him up. He will say 'flower' and 'car' when we point to these objects. He can say the body parts like 'nose, mouth, hair, eyes and ear' and will point at them when we say them. He will also say 'bye bye' when prompted. So his vocab has improved and just two days ago, he was imitating one of his favourite

videos that his father bought for him by singing along 'I am fine, thank you' repeatedly. He also moves and dances when he sees the video and he can now complete the video (25 minutes) by sitting and watching. Previously he will only watch for 10 minutes and he will walk away to do some other things like jumping on the trampoline and playing with his toys. Mood - His mood swing is very unpredictable now. One minute he is happy, smiling and laughing, next minutes he will bang his head on the sofa (he always finds something soft to bang on, smart guy) and shouts and cries for no apparent reasons. We can't figure out why he cries sometimes, so we just let him cry until he stops. Sometime, the father will threaten to punish him to stop crying and shouting as it gets quite annoying to hear him shout and whine and cry for no apparent reasons. Facial Expression - His teacher says he is dreamy. Very fond of day dreaming and he needs to be pulled into action. He is quiet when we take him for a ride in the car, he would sit quietly and look outside. You mentioned that his eye is with a bluish tint, and I notice it is still bluish. Vocal Expression - Has improved. Could be due to him being almost 5 years old come next month. Also he seems to imitate quite well now and he is very willing to say the word we want him to say when he is happy. Like he wish to take a walk around the neighbourhood and we oblige, and along the way, we will stop and point at a stationery car and ask him 'what is this ?'. He sometimes will say exactly that 'what is this' then he realises that he is suppose to say car and he will say 'car'. Then we point at a flower along the road and this time, we wouldn't say 'what is this?', we just point at the flower and not say a word, and after a short pause, he will say 'flower'. Parent comment 'Gosh, I was so happy'. Social Relations - He seems to like to be with people now and sometime he will pull his sister to play with him or lie down with him on the sofa. He will hug his sister but when the sister does not want to play with him, he will scratch her. Anyone makes him angry or don't let him do something he wants to do, his one and only reaction is to scratch the person. His father is a regular target. But me, the mummy, seldom the victim because I usually try not to provoke him unnecessarily. Movement and body language - He can dance to music and cartoons now. He will pull us up and push us to the door when he wants us to take him out. He still jumps a lot on the trampoline, we have a trampoline in the living room and he normally jumps on the trampoline while watching TV or when he is happy. He also likes to jump on bed and do a dive or back flip or frog jump on the bed. Loves climbing and jumping and rolling and running. He runs so fast now that none of us can catch up with him. So it is rather dangerous when we take him out in the road where there are cars and traffic. We usually take him to the play ground, or shopping centres so that he can have fun and walk freely and we will follow behind him closely. One good thing is that now if we ask him to wait, hold hand, he will walk back and hold hand with us, but only for a short while and he is off running again. Activity - He attends two hours of early intervention at a centre for special children daily and the rest of the time, he is put in a child care until 6 pm in the evening where he will mix with a normal regular 3 yrs old girl and look after by an aide and a teacher , who will teach him occasionally to write and talk. Next year, he will attend 2 hours of kindergarten classes in the morning for normal kids and another 2 hours of session for special kids. Obsessions - Obsesses with a particular video and some particular toys. Loves to scribble. Can read and write some alphabets with free hands. Can recite numbers 1 - 10 and recognise the numbers in random order. Relationship to food - Likes to eat crunchy stuff. The chicken meat and pork meat has to be fried till crispy for him. Appetite - Same, not much change. Eats three meals a day plus some snacks and biscuits in between. Sound sensitivity - He closes his ears more often now. Previously he never uses his hands to close his ears. Now when he watches cartoons or when we take him for a ride, he would close both ears with his hands even if the noise level is normal for me. He does that quite often now. Almost daily. Light sensitivity - He is unable to stand the sight of strong sun light. He would close his eyes with his hands and often rub his eyes until it gets so red and swollen. Stool - Is regular, he does it once a day and sometimes once in two days. It's normal stool. Urine - He is self regulating in the day time by going to the toilet himself but at times, he does not do that. We have to prompt him when we see him holding on to himself or when there is a lapse of 45 minutes. At night, we make sure he empties his bladder before he goes to bed, and we will wake him up at 5am or 6am to urinate again. If we don't do that he will urinate in the bed. He is so lazy to get up to urinate that I think it will be quite a while before he will do that on his own. So we will just have to wake him up. Skin - Still dry and itchy. Not sure whether it is the food he takes or the supplement. Still can't figure out what causes him to scratch until he bleeds and until eczema developed. When it gets bad, we will apply steroid cream on the eczema spots. He often scratches his bottom and the anus area. His test results show yeast overgrowth. Weight - His weight is ok, within the ideal weight. Fever - Have developed fever and flu a few weeks back. It lasted for 3 days and he is okay now. Other health signs - His eyes are more itchy now. He rubs his eyes very often until it gets red and swollen. He does not know when to stop rubbing, almost become a habit now. Also he closes his ears with both hands more often now. And he is looking at things at 45 degree angle rather then straight on like us. <u>16 week review:</u> When we met him the second time he was as described above.

He did continue to take white bread (contains yeast), some dairy and also some foods containing food dye in his diet. We talked with the family and suggested trying additionally firm elimination of any product which contained food dyes, to be careful of the added ingredients in foods like ice cream and reduction of particularly active dry yeast containing breads. We suggested also AIT screening and visual screening. The most recent communication includes: CHANGES OBSERVED: Behavior: More playful, still has aggression in form of scratching if he does not get what he wants or is prevented from doing what he wants. Eye Contact: **Better, no longer stare at edges of tables.** Speech: No spontaneous speech. Will name objects when asked or prompted. Will speak when forced to ask for food. Mood: Generally ok. Facial Expression: more natural, less robot-like. Vocal Expression: More babbling. Social Relations: Not much. Movement and body language: Motor skill ok can write walk normally. Activity: Plays correctly with toys (no spinning) with figurines seated on toy tram, Able to use rolled up paper to hit ball thrown at him. Relationship to food: Very selective. Appetite: Good to average. Sound sensitivity: Certain sound (hissing and buzzing) will cause him to cover ears. Light sensitivity: None. HEALTH: Occasional bout of eczema. Stool: Light to dark brown medium to soft - controlled with probiotics.

20. Male, difficult to conceive, late in life baby. Only child, forceps delivery, resisted feeding in infancy, allergy to antibiotics, otitis media, hives at age 7. Pre-consultation information included: Does not make eye contact, self entertaining but meaningful activity (art), social interaction initiates slowly, prefers to watch, attempts new activities in private, temper tantrums 2-3 times every 3-4 days. Confused and incoherent babbling, improper use of pronouns, picking at skin, tactile defensive, sleep disturbance, limited speech, atypical vocalizations, splinter skills – rote memory. Dry skin, stool yellow when sick. Has had OT, ABA, speech therapy. Began GFCF and additive-free diet at age 5 with significant improvements. **Had lutein-free dietary intervention consultation at age 11**. At 8 weeks, no changes noted. Follow-up 16 weeks: behavior is more tricky. Can now stay home alone. Uses lots more words. Vocal expression improved, social very courteous, now in age-appropriate recreation – basketball. Sound sensitivity decreased, now wearing glasses. Few significant symptoms of ASD remain.

21. Male delivered by emergency c-section – vacuum suction failed. Eldest of 2. Re-occurring Gastroenteritis. Striking feature – blond hair although of Asian ancestry. Pre-consultation information included: He has visual fixations, dreamy smile, chooses to be alone, self-entertaining, single words, confused or incoherent babbling, fixates, repetitive use of phrase: 'Oh tummy' demands to be carried, hand flapping, lethargic, obsessed with water and books, must carry comfort objects, taps, refuses vegetables unless force-fed which is like a trauma, demands music, stares, lacks stranger and separation anxiety, plays with saliva, picks at skin, hypersensitive to distress, abnormal sensory inspection – places ear against things that hum or vibrate. Tactile defensive, high tolerance for pain, mood swings, laughing for no apparent reason, unresponsive in some situations, unusual fears esp. toilets, problem with attention to safety, rashes. Began dietary intervention at **age 5 years and 10 months**. 16 week evaluation: Increased awareness, attention. Facial expression is more advanced. Mood is reported as variable and child is reported as charming, manipulative and at times oppositional. Vocalization is improved and words are being used in beginning conversational format. Much more sociable. Hair color changed to brown. Relationship to food is improved. Diet remains limited with multiple food allergies having been identified. Bowel movement is much improved.

22. Male is an artist and only child. When we first met him, he came out of his room after a great deal of prompting. He spent almost all his time working on his artwork, which was very original, colorful, focused on children , groups, outdoor activities. He likes computer games and created some art using symbols from the computer arranged and laminated into finished projects. Parents had provided diet restrictions including no additives and limited wheat and dairy for about 5 years. **He had dietary intervention consult at age 13.** 8 week evaluation. Calmer, eye contact - good,. Speech - has improved, though not fluent. Expresses himself more appropriately. Can argue/voice objections. Better mood, not so much mood swing. Calmer and can controllable. Facial Expression: more natural, less robot-like. Vocal Expression: There is a more concentrated look on his face when he talks. Social Relations: seeks help, tends to argue, more willing to talk, slower when told to do work, not so routinised. Gymnastics-more focused, occasional space awareness problem Obsessions: not noticeable. Relationship to food: enjoys food, eager to try new food. Appetite – good. HEALTH: good - only sick twice since consultation. Stool: Before greenish, now brown. Skin: Normal. Rashes on the back occasionally. Weight: normal weight increase, and height increase. Fever: So far fever for 2 days due to flu. Other health signs: occasionally blinks his eyes. (result of eye test is normal, sinus problems,

always bites the skin of his finger tips. After his fever he had bad cough for more than two weeks, especially at night. I noticed a lot of phlegm. So I gave him horseradish plus. Now he has recovered. At present he tends to move about quite often. But his verbal stimming has reduced to the minimum. On the positive side he has developed much better understanding and verbal skills. 16 week evaluation: Few significant symptoms of ASD remain. When we met him for the second time, he had grown in height tremendously. He was confident, beaming, bouncy. His art work had matured and with the help of his father, he was producing bright, colorful depictions of scenes with buildings, children, trees and ocean scenes.

23. Male was born with cord sepsis, bleeding iris followed by long hospital stay. Pre-consultation information included: Characteristics - Poor facial expression, squints, doesn't raise eyebrows, looks threatened or frightened, does not point, expresses desires through tantrums (occasionally), echolalic, single words and short sentences, no regard for personal space, manipulative, demanding, hand-flapping, repetitive touching of objects, obsession with water, words and numbers, he has had OT, speech therapy, early intervention, ABA, and Glen Dolman. Multiple allergies discovered through testing. With Glen Dolman he started reading at age 4 years. Takes no fruit, juice or raw vegetables. **He began dietary intervention at age 8 years and 11 months.** When we first met him his skin appeared ashen and dry. He looked sleepy, heavy - half-closed eyes and appeared as younger than age in body language and facial expression. He was mostly sitting with his knees pulled to his chest, smiling and looking at the adults talking to one another. 8 week evaluation: No significant changes reported after implementing dietary intervention. He had AIT since starting the new diet. 16 week evaluation. Better appetite and relationship to food. Dark circles under eyes are now gone. He is passing bowel movement 3 times daily which is increased from pre-diet – used to be 1 time per day. Handwriting is notably improved. Weight gain of 3kgs. Tantrums reduced after AIT. When we met him again, his skin was shiny and had an orangy tint. He joined us when requested, was more sociable and confident. Parents were providing a home-school program and pleased with his progress. They prefer the less restrictive GFCF diet which goes well with the cultural diet of choice.

24. Male. Pre-consultation information included: Mother received epidural during vacuum delivery. Normal at age 1 ½- speech development, short phrases, social and interactive. Experienced respiratory infections and acute gastroenteritis during early childhood. At age 2 he developed regression. Characteristics – eyes look in different directions, does not look in the direction of a sound stimulus. Has threatened or frightened look, sometimes threatening or agitated expression, chooses to be alone, is self-entertaining, lacks reciprocal interaction, no real verbal language, confused or incoherent babbling, no regard for personal space, demands to be carried, spins objects, touches foods, spits out foods, mouths and chews on objects, fear of mechanical noise, lacks stranger and separation anxiety, picks at skin, loves movement, unresponsive at times, high tolerance for pain, sleep disturbances once or twice per month, splinter skills, escape artist, problems with attention and safety, hyper-focused on some activities. Receives ABA and speech therapy. When we first met him, he was aware that we were there, and very skilful in knowing when his parents were distracted, at which time he threatened to disturb the video equipment. When caught, he smiled. He was non-verbal. He was entertained by his live-in cousin who acts as a shadow or one-to-one professional. **He began dietary intervention at age 5 years and 4 months.** Experienced period of urinary incontinence. 6-month review: we found that there were some small errors in the diet, possibly making the improvements not as rapid as we would have hoped. When we met him again, he was no longer demanding to be carried, more relaxed, physically stronger. Less attention seeking behavior. More able to engage in meaningful interaction. Made social contact with us. Several weeks after we saw him and additional changes were made to the diet, he is reported to have initiated verbal communication when angered with two word combinations being used.

25. Female normal birth, has birth marks. Youngest of two children. Pre-consultation information included: She has received ABA. Maintained self-limited diet, refusing all fruits and most vegetables. Doesn't raise eyebrows, dazed poor blank expression, fixates on lights, chooses to be alone, self-entertaining, single words, confused and incoherent babbling, refuses to move, ataxic gait, mechanical movement, walks on tiptoes, with hands in air and hands extended. Never stops moving, fast sudden movements, hand flapping, moves fingers in front of eyes, rocks from forward to back, self injurious, moves away from sound and people, obsessed with water, food and music. Vomiting in infancy, tense at mealtime, smells and touches food before eating, also steals and hordes food. Escapes and is found in kitchen, fear of mechanical noise and sharp sounds, covers ears, stands and stares out window, lethargic at times, demands routine, lacks stranger and separation anxiety, tactile defensive, high tolerance for pain, bites, pushes, scratches and hits. Began dietary intervention at age **7 years 6**

months. Family had difficulty beginning and implemented dietary intervention without consult, removing all dairy and gluten which may have resulted in or contributed to reported escalation of aggression. Upon consultation dairy fats and wheat (other than semolina) in unleavened bread, pasta and biscuits (cookies, that do not contain egg yolk) were returned to her diet. The 8 week evaluation reflects diet information received after consultation. 8 week evaluation. Behavior – aggression leveled off. Eye contact – good. Speech – 'When she wants' 4 month evaluation: When we met her, striking feature was her tremendous size, very tall and powerful. We were shown her school work, and her writing had improved tremendously. She was sociable, although threatening at first. Made eye contact. Parents report speech is coming very slowly, mostly related to food. Also report of precocious puberty.

26. Male of diverse ancestry. Natural birth. Middle of three children. Pre-consultation information included: Developing well in early childhood. Regression into autism at age 1½. Dazed or blank expression, uncoordinated eye movements, no eye contact, concerned look, threatened or agitated expression, demands to be left alone, secretive, does not point, temper tantrums when routine is changed, single words, fixates on TV and video, repetitive use of phrases: 'tear shirt and papa angry'. Finger movement in front of eyes, eats some foods ravenously, smells food before eating, self-limited diet: white vegetables, brown rice, white fish, black currant juice, skinless chicken and lentils. Self-injurious behavior, laughing for no apparent reason, problem with attention and safety, very aggressive, bites, pinches. Scratches and pushes. Mother is afraid to be left alone with him. Nail spots. He began dietary intervention **at age 10**. 6 month evaluation. This young man has made remarkable progress in all areas. He is now conversational. He is now interacting with his younger male sibling and entertaining his younger sibling for long periods with family being happy and confident in the relationship whereas before dietary intervention he was not left alone with the younger sibling. Parent expressed pleasure on being able to take his son on world travel and business trips which was not possible before dietary intervention.

27. Male. Pre-consultation information included: Large head circumference. Emergency C-section. Spoke and sang and asking questions at 4 years. Epilepsy began in early childhood. Poor facial expression does not make tears, lacks social interaction, does not point, self-entertaining, echolalic, stutters, single words in short sentences, fantasy language, manipulative and demanding, obsessed with routine, food, tidiness, music. Must carry comfort object. Does not chew. Often spits out food, self-limited diet. Hypersensitive hearing, sleep disturbance, splinter skills: plays piano. Tantrums, frequent mood changes, unusual fears, problems with attention and safety, aggressive, prone to constipation. Had been on GFCF diet for a long time. **He began dietary intervention at age 20.** 16 week evaluation. Speech – increased verbalization and conversational experimentation. He is conversational with family and this is notably improved. Facial expression – loosening. Emotional expression has been observed. He is a bit more formal with people, socially aware, 'takes people serious'. Obsessions (neatness) – worse. Appetite is good. Gained a little weight.

28. Male. Pre-consultation information includes: He was born by caesarean section delivery. He is the fourth born child. He is a late in life baby. Striking feature – very fair skin compared to parents. Epileptic – he is said to seizure if DHA is not given as supplement. He is described with birth marks as vitiligo. He began dietary intervention at age **5 years and 5 months.** 16 week evaluation. Family has been cautious with his diet since infancy and he receives no food additives, food dyes and so on. Family reports no significant changes when additionally implementing lutein free component.

29. Male. Pre-consultation information included: Diverse ancestry. Born by C-section. He is youngest of 2. Very particular about what he eats. Circular movement to his eyes. Self-entertaining. Expresses desires through tantrum. Echolalic, babbling, single words and short sentences. Fixates on children's TV programs. Walks on tiptoes. Moves fingers in front of eyes, spins things, hums, unresponsive at times, abnormal sensory inspection – smelling. Developmental regression at age 1 ½ to 2 , laughing for no apparent reason. He began dietary intervention at age **7 years and 5 months.** 16 week evaluation. Family states they could not implement the gluten and casein recommendations and felt adequate progress was obtained with lutein free application although GF and CF was also recommended. The young man is working on grade level academically and is interested in computers and computer games. He has some improved social skills and communication. Striking features include dark brown eyes when both parents have blue eyes.

30. Male. Pre-consultation information included: He was born premature with severe jaundice and café au lait birth marks. He is reported to have a dazed expression, eyes which appear to look in two

different directions, visual fixations on light, does not blink. He has a limited ability to control facial muscles and he appears with a worried or concerned look. He is self-entertaining and he does not point. He does use temper tantrum. He does vocalize and uses also some incoherent babbling. He walks in ataxic gait and on tip toes and likes spinning circles. Has many obsessions including water, puzzles, routine and tidiness. He is afraid of some mechanical sounds. He clicks his tongue and squints. He lacks stranger anxiety. He is prone to screaming, agitation, tantrums and mood changes as well as laughing for no apparent reason. He has some unusual fears and problems with attention to safety. He was a year old before he sat up and nearly two before he crawled. He began dietary intervention at age **3 years and 8 months.** 8 week evaluation. Behavior includes bad tantrums, active during the night - can't sleep or take afternoon nap so regularly, giggles, a lot of stimming characteristics such as twisting his thumb and second fingers - so addicted to it, watching his fingers twist (side ways), screaming (very high pitch), sudden cry/laugh. More attached to mother, afraid to sleep alone, must hug him. Eye Contact - slightly improved. Speech :still non verbal but making sounds. Moody, will laugh/cry suddenly, but mostly happy mood when playing or going out (traveling by car/bus). Facial Expression is more than last time. When he is not interested in learning, he will rub his eyes/put his head underneath the table. He is trying to move his lips but no sound and he is observing when you force him to look at you. When I get angry he will hold my hand and watch my face. I think he knows when I am angry. He has started to play with his cousins after staying with them for 2 days (line up and take turns to play slide), but still prefers his own play. He will show us what he wants, as he is non verbal, will read your face expressions. He likes playing swing, slide, flipping papers/catalog, watching advertisement, running about in the playground but no direction, thus always fall down, scared to be dirty so doesn't want to run on the grass without shoes, now slowly he can take it and is liking crawling too. A lot of stimming/giggling especially when I put him on DMG. He only loves rice milk, plain rice with fried fish (not steam fish), I am worried about the mercury because he is eating quite a lot of fish. He doesn't like solid food ,he prefer food containing soya sauce darker in colours (especially fried rice) also pizza, Kentucky fried chicken, etc all the forbidden food he likes. I observed yesterday, we ate dinner in one of the Chinese restaurants, he was interested in his own food, blueberry cookies and fried fish – often he doesn't want any food at all, but these days he will ask for food. He is afraid of the hair dryer sound and mixer, will run towards me - he use to put one hand to cover one of his ears. Most of the time he is very alert to door opening and likes to go out of the house. He is still afraid of fire, also sensitive to torch light and sunlight. Stool is normal since last week and before that 1-2 times a week, very hard, now alternate day and not so hard and nice in color too. I find the skin and hair is better. Sometimes red at the back of his right ear. His eyes also were very itchy and he used to rub them. Easy to get mosquito bite like marks, he likes to dig his teeth with his fingers, he likes to bite his blanket (he use to bite his grandmother - now cut down, also likes to bite small kids he feels happy and funny to do so. He use to have mouth ulcer problem. He is still afraid to brush his teeth. 16 week evaluation. Has not initiated verbal speech or babbling but is making lots of sounds and still engages in screaming and making loud attention seeking sounds. He is reported as less hyperactive. No longer toe walking or spinning in circles. Much more interested in food and appetite is better.

31. Male. Pre-consultation information includes: He is an only child. He suffered from UTI at age two. He was never introduced to gluten containing foods. Birth by C-section, no jaundice. When we met him the first time he presented with allergic shiners and dry itchy skin. He was quiet. 8 week evaluation. Behavior : Fluctuates from time to time. For the 1st two weeks, when we started Sara's' diet, he is able to sit still and pay attention in the class. In fact, he is able to respond well. However, from the 3rd week onwards, his behavior changes from bad to worse and it is very difficult to handle him. But this difficult behavior lasted for one month and then he is an angel again with fluctuations. Eye contact has improved but he is still unable to focus for long periods. He is still parrot talking. He still throws tantrums now and then, but much less. Facial Expression - able to express better. Vocal expression is still very poor, but improving. He has begun to play with other children. He his able to eliminate some of his bad body movement. And he is now starting to play with toys. Obsessions are pencils, books and arranging of objects. Relationship to food is good and appetite is good. Sound sensitivity is reduced. Light sensitivity is better as compared to previously. Stool is yellowish and very smelly. There seems to be very slight rashes on his body. Improved as compared to previously. Weight is the same. He did not suffer from any fever ever since he started Sara's' diet. He began dietary intervention on at **age five.** 16 week evaluation included eye-contact is still sporadic but better than before diet. His mood is generally good but he still has a temper. He is using words now but they are flat and un-expressive. Primary obsession is with lines. Appetite is good. No real sound sensitivity remains but he is still light sensitive. Stool is normal now. Skin is good and healing. Height and weight have increased. When we met him a second time he was engaged in use of the family entertainment

equipment and actively listening to and watching karaoke videos. He joined us in his play-work room and he was mildly sociable. The allergic shiners had disappeared. His teacher joined us as she had been impressed with the rapid improvements in the classroom and wanted to learn more about dietary intervention.

32. Male. He presents with vitiligo patches. When we first met him he appeared as a much younger child. 16 week evaluation. Some improvements noted but family is unable to implement gluten and yeast free diet elements as recommended. This young man demands very few but very specific foods of which bread is a primary diet staple. He began dietary intervention **at age 12**. Significant changes noted include rapid transition through puberty. Family reports that strict adherence to the dietary intervention is sometimes not possible but with each error in lutein consumption obvious reactions and regressions appear most notably as hang-over type symptoms. He has a female sibling with mild ASD who has followed the GFCF diet previously and continues on the GFCF diet successfully.

33. Male, only child. Pre-consultation diet information included dazed or blank expression and does not or cannot smile. Chooses to be alone and is self-entertaining, social interaction initiates slowly after trust has been established. He prefers to watch rather than participate and attempts new activities in private. He is obsessive about appearance (tidy). Lacks reciprocal interaction. Has no verbal language, is Echolalic. Can use some single-words and/or short sentences. Is heard using confused or incoherent babbling, improper use of pronouns (I, you, he, she) and does not reciprocate conversationally. He does have an extensive memory for words, appears to talk to invisible companion(s) and fixates on specific videos, TV programs:
Double Dare, Figure it out. Legend of the hidden temple. Does have repetitive use of certain words and phrases, sometimes he will tend to repeat until he gets it. He s said to have little or no regard for personal space, poor pragmatic language skills. He walks with hands in the air and elbows up, jumps (flapping hands/fingers. **He began dietary intervention at age 9.** Family has communicated all is fine, they began to implement the diet recommendations and also have had additional allergy testing.

34. Male is the youngest child of two boys. Pre-consultation information included: In infancy and early childhood he is reported as frequently ill, vomiting and difficulty with feeding and formula, high fever, sore throat and colds/flu. On medication frequently. He does not raise eye brows, has a dazed expression, his eyes appear to look in opposite directions and he sometimes has an intense eye gaze. His face generally lacks expression but he sometimes appears as agitated. He chooses to be alone and is self-entertaining. Expresses desires through tantrum. He does not reciprocate conversationally. He fixates best ever ABC video. He has no regard for personal space and often refuses to move. He can be manipulative and demanding. His movement is very mechanical. He touches objects repetitively and is generally uninterested and lethargic. His obsessions are water, certain clothes and chaos. He must carry a comfort object. He began to use single words and short phrases at age 6. He does not chew, has sensitive teeth and smells food before tasting. He often spits out food. He will also horde food, steal food, throw food and escape to the kitchen to sneak food. He can sing and appears to enjoy singing, he also likes making tapping noises. He frequently stares, often just stands and stares out the window. He is often unresponsive and has difficulty with crowds, commotion and change of environment. He is tactile defensive, has a high tolerance for pain and sleep disturbance. He makes atypical vocalizations. He often screams, is easily agitated, tantrums and engages in self injurious behavior. He is aggressive and will bite, hit, push, pinch and hit. He is unpredictable. Two years of speech therapy is reported to have resulted in no progress. ABA therapy has been provided and parents report initially he made gains but no further improvements have been obtainable. He presented as a big boy with ashen/dry skin. He made no real attempt at contact and no eye contact. He walked stiffly and his fingers were clenched. 16 week evaluation. No major improvements are noted. He began diet at **age 9 years.** He is a large and very strong willed young man whose focus is on food. He is mildly obese and lethargic. He is reported to have lost 1 kg. On our return visit we did obtain eye-contact and some physical contact. He joined us at the table and clearly asked for food several times, speaking in clear short sentences. His hands were no longer clenched. He appeared as determined. Although said to be generally lethargic and unmoveable he made rapid movement towards the kitchen each time his mother unlocked the door to the kitchen area. The toilet area was contained in the same area of the house as the kitchen and the door had to be unlocked to gain entrance to the toilet. He appeared as crafty enough to make need of the toilet known and gain entrance to the kitchen several times but was unsuccessful at obtaining snack foods.

35. Male middle child. Pre-consultation information included: He has known allergy to egg. Vitiligo patch on face. He has suffered from frequent colds, flu and stomach aches and has been hospitalized for hand, foot and mouth disease as well as treated for hand, foot and mouth disease several times outside the hospital setting. Characteristics reported included chooses to be alone self-entertaining, tantrums and expresses desires through tantrum, uses fantasy language, has no regard for personal space, is demanding. He jumps, paces and touches objects repetitively. He is obsessed with books and has a collection of comfort objects, must carry a comfort object. He refuses to come to the table to eat. He refuses to eat spicy food and vegetables. He has a fear of sharp sounds. Engages frequently in self-stimulation (genitals). Loves movement and is often unresponsive to verbal input. He appears as distressed in crowds. He is tactile defensive. Has limited speech and atypical vocalizations. He has splinter skills and is said to create diversions so he can engage in self-selected activities. He often over-reacts and is prone to screaming and tantrums. Is sometimes aggressive, mostly pushes. He passes large stool. **Began diet at age 9.** <u>8 week evaluation</u>. Behavior: more controlled tantrums. Eye contact: still the same i.e. fleeting eye contact i.e. move the face to look at you, except the other day he actually looked at me straight into the eye. Speech: very much improved with long sentences and correct grammar and structure. Vocal Expression: there seems to be an increase of vocal stimulations, and talking to himself. Activity: able to stay on task longer without prompting. Obsessions: no change-still obsessed with dinosaurs. 16 week evaluation. Parents report he is now on grade level academically. Some behaviors are somewhat inappropriate for age but are similar to NT 6 year old sibling's behavior and activity level. His appetite is good and relationship to food is reported as much improved. He is still obsessive about books and prefers to spend his free time reading the encyclopedia.

36. Male is the youngest child with two older siblings. Information included: No birth trauma, he met his early developmental milestones but did not use words until age 6 and he began to ask questions at age 11.5 years. He refuses most vegetables, spicy foods and sea food. Pre-consultation information includes he does not make eye-contact, does not make tears, does not blink and does not look in the direction of sound stimulus. He chooses to be alone, attempts new activities in private. Lacks reciprocal interaction and does not point or make needs known with body language, he displays temper tantrum and expresses desired through temper tantrum. He uses single words and short sentences as well as confused and often incoherent babbling. Improper use of pronouns and uses also a fantasy language. He uses the word 'only' repetitively. He is reported to never stop moving, pacing and jumping, Moves away from sound and people. His obsessions include water, routine, clothes, food, light, certain colors (green) and words. He touches food and smells food before attempting to eat. He displays fear of many sounds, particularly mechanical sounds and sharp sounds. He often hums, squints in sunlight. He does not share and does not participate. He lacks separation anxiety. He is often unresponsive. He is tactile defensive. Has some splinter skills. Is often hyper-focused on selected activities. He is aggressive and it is generally limited to pushing. He is frequently constipated. <u>8 week evaluation.</u> He is calmer. Eye contact is now good. Speech has improved, though not fluent, he expresses himself more appropriately. Can argue/voice objections. Better mood, not so much mood swing. Calmer and controllable. Facial expression is more natural, less robot-like. There is a more concentrated look on his face when he talks. He seeks help, tends to argue, and is more willing to talk. He is slower moving when told to do work, not so routinised. At gymnastics-more focused, occasional space awareness problem. Obsessions are not noticeable. He is enjoying food and eager to try new food. His appetite is good. Sound sensitivity is not noticeable. Health is good - only sick twice since consultation. Stool: Before greenish, now brown. Skin is normal, rashes appear on the back occasionally. Weight increase, and height increase. So far fever for 2 days due to flu. Other health signs: occasionally blinks his eyes. (result of eye test is normal, sinus problems, always bite the skin of his finger tips. After his fever he had bad cough for more than two weeks, especially at night. I noticed a lot of phlegm. Now he has recovered. At present he tends to move about quite often. But his verbal stimming has reduced to the minimum. On the positive side he has developed much better understanding and verbal skills. He reports some numbness in his leg. Also we notice that he grinds his teeth during sleep almost every night. He began dietary intervention **at age 13**. <u>16 week evaluation.</u> More relaxed, confident and socially aware. His writing is much improved and he is now learning to write in cursive. He is very interested in internet and computers. Temper is gone, he appears generally as genuinely happy. He is still delayed socially but has entered a vocational training program where he is doing well.

37. Female. Began dietary intervention at age 4. <u>8 week evaluation.</u> She is less aggression and her tolerance has increased Her eye-contact is much better. Speech: not much difference noted. She is less lethargic and less tired. Relationship to food is much better and her appetite is also better. Light sensitivity has increased. Stool remains as yellow. Immune system improved as doesn't get sick easily.

38. Female is an only child. Pre-consultation information included: She was born prematurely by forceps delivery with induced labor. She displayed delayed jaundice. Other information included poor facial expression, does not raise eye-brows, eye movement is uncoordinated and the eyes appear to look in different directions. She is self-entertaining. Lacks reciprocal interaction. Displays temper tantrum when routine is changed. She uses single words, short phrases and confused and incoherent babbling. She fixates on Barney (child's video) and will state 'Mummy, I want to watch VCR please'. She displays repetitive touching of objects and is obsessed with water, certain objects, clothes, food, color and books. She has a collection of comfort objects which she frequently lines up. She was prone to vomiting in infancy. She does not chew and she has very limited food choices. She bites frequently on plastic objects. She likes to eat non-food items and this includes paste and buttons. She exhibits fear of sharp sounds. Demands sameness of routine. She lacks stranger anxiety. She is often unresponsive. She tantrums, has frequent mood changes, laughs for no apparent reason and has problems with attention to safety. When she is agitated she wants her feet massaged. 8 week evaluation. Behavior : less compliance, more tantrum, more assertive in demanding. Eye-contact is still poor. Speech : more, slurred. More mood swing (crying without a reason). Facial Expression : very expressive. Vocal Expression : better when calling mummy & daddy with correct intonation during appropriate circumstances. Social Relations : slight improvement. Activity : better play skill. Obsessions : must change her clothing after going out. Relationship to food : would prefer our food than hers love eating out more than home cooking. Appetite is slightly better. She us very insecure when there are loud sounds, when too loud she freaks out. Stool is yellow to brown. Skin: irritation near eye & nose area frequent rubbing of eyes until red. Fever: once. Lots of nose irritation in the morning and with change of environment. Began dietary intervention **at age 7.** 6 month evaluation. When we met her the second time she was maintaining the gains of the eight week evaluation but had also become notably more aggressive and demanding. She was meeting her educational objectives but demanding increased rewards for participation. She was aware we were there and she made good eye contact with us.

39. Male was born full term by C-section delivery. He is the oldest of two children. Pre-consult information includes he rarely makes eye contact. He chooses to be alone and is self-entertaining, He has been Echolalic but this ins infrequent. He has used single words and short phrases but does not reciprocate conversationally. He has appeared as talking to invisible companion. No regard for personal space, particularly likes to squeeze between two people. Demanding behavior is usually associated with food. Has, at times been manipulative. Sometimes walks with ataxic gait, but not always. Sometimes walks like jello, and sometimes walks with hands in the air and elbows extended. Is generally moving, jumping, spinning. He moves his fingers in front of his eyes and finger flicks. Moves towards light. Has obsessions with food, words and books. When younger he lined up objects, particularly child transport vehicles. He has more recently begun rolling them across his hands. He does not chew, smells foods before attempting and eats with his hands. He often spits food out. Only eats a few foods and is selective by color, brand and shape, He will also eat non-food items such as play dough, hair cream, soap, shampoo and detergent. He sometimes covers his ears. He does not share. Abnormal sensory inspection of objects, and tactile defensive. He is prone to screaming and laughing for no apparent reason. He has displayed unusual fears, has problems with attention to safety and is sometimes aggressive. He has received ABA therapy in the home daily since age 3, OT weekly since age 5. Results of these interventions are reported to include that he is able to say some words, able to write, fine and gross motor skills have improved. He is developing some play and academic skills. 16 week evaluation. No significant changes. More able to manipulate. He began dietary intervention **at age 6.**

40. Male is one of three children. He was a premature birth who returned to the hospital with chest congestion and plegm. Had early expression of verbal language which included two syllable words at 13 months i.e. mama and dada. He appeared to have regression at 1.5 to 3 years. Pre-consultation information included: 'Is he ever surprised?', squints, visual fixations and intense eye gaze. Dreamy smile. Self-entertaining and social interaction initiates slowly after trust has been established, he prefers to watch rather than participate. Attempts new activities in private, is generally unconcerned with appearance. He lacks reciprocal interaction. He sometimes displays temper when routine is changed. He uses single words and/or short sentences and sometimes confused or incoherent babbling. He fixates on action videos such as Power Rangers. And, Toy story. He has no regard for personal space. Walks on balls of feet or tip toes. Jumps, paces and occasionally moves his fingers in front of his eyes. Obsessions include only wants to wear basic white soft shirt. He also works video equipment so well that he can watch a favorite video frame by frame. He is reported to eat with his hands, touch his food

and have very limited food choices: Fried, crispy potatoes, white rice, boiled sausage and anchovies. He only drinks water and milo. He will eat non-food items such as play dough. He has sound sensitivity which has included fear of mechanical sounds and he sometimes covers his ears. He is said to lack stranger anxiety, experience distress in commotion or crowds and have fascination with shiny surfaces. He is tactile defensive and does not like wearing clothes, teeth brushed or hair combed. He experiences sleep disturbance. He uses atypical vocalization and makes repetitive sounds. He has exhibited laughing for no apparent reason. He is unresponsive in some situations, has problems with attention to safety and unusual fears. **He began dietary intervention at age 6.5.** Parents report difficulty with fully implementing diet recommendations. At the follow up consultation we talked about child friendly sources of food favorites such as chocolate spreads containing nut butters which did not contain food dyes or dairy. They reported he is slightly more open to new foods, verbal stim is gone.

41. Female is an only child who was a late in life baby. Her pre-consultation information included urinary track infection in infancy, otherwise generally healthy appearance. She does not raise eye brows. Chooses to be alone and is self-entertaining. She does not point. Expresses her desires through tantrum. She can use single words and short phrases but does not reciprocate conversationally. She has no regard for personal space and she is manipulative. She is prone to jumping and pacing. Her obsessions include water, music, CD's and some specific objects. She has a collection of comfort objects. She both touches and smells food before eating. She also eats non-food items such as play dough and tissue paper. She demands music and is frequently heard humming and singing. She squints in sunlight. She lacks stranger anxiety. She is often unresponsive. She creates diversion and engages in self-selected activities. She has mood swings and displays laughing for no apparent reason. She is aggressive and this is displayed primarily through pinching. She has received speech, OT and is currently receiving ABA and sensory integration. Results include she is now able to communicate verbally to obtain desired items. She is presently gluten free and her food preferences include very minimal intake of dairy (occasional ice-cream). <u>8 week evaluation</u> includes she received AIT after which there was a sharp drop in behavior problems followed by horrendous increase in problem behaviors, particularly crying for no apparent reason. <u>16 week evaluation.</u> Many changes noted, the crying for no apparent reason has stopped. She is experiencing jealousy and acting out with drama. Improved verbal communication. Improved socialization. Better relationship to food. Sharp reduction in autistic behavior and aggression was followed by intense rise in aggression and avoidance behavior. She has presented with carotenemia in the past. She began dietary intervention at age **8 years and 9 months.**

42. Male is the middle child. He was born tongue-tied and this was corrected by surgery. Upon first meeting the family room was separated from the rest of the open plan living area by barricades. The elder sibling was inside the family living area protected from his younger sibling who was pacing back and forth in the open space. The dining room chairs had been removed from the main living area and were locked in a separate room. A main room off the living area held a computer and office type study which was locked. Upon first meeting there were only the 2 boys with the third child on the way. The young boy did not approach us, he spent most of the time making inappropriate and annoying noises which greatly irritated his brother. When we attempted to photograph him he became very agitated and this escalated to self injurious behaviors. He began dietary intervention **at age 6**. <u>16 week evaluation.</u> Excellent changes noted. Improved relationship to family. Able to sit and learn computer and now is happy to play and learn on the computer. Not as aggressive or frightening to siblings. Better relationship to food. When we met him the second time the living room was no longer barricaded from the rest of the living area. The study door was unlocked and he had access to the computer and spent most of the time we were there showing us how many things he had learned to do on the computer. His family was pleased to announce he had been accepted at the local school.

43. Male is an only child. He is reported to have been normal delivery presenting with jaundice. He is reported to suffer from frequent bronchitis and smelly ear wax. Pre-consult information includes he takes no fruits or juice and few vegetables. For this child we did not recommend removing dairy or wheat other than those which are also sources of lutein (semolina, anything containing egg yolk). This is one of very few diet consults that concluded without recommendation to remove active dry yeast from the diet. He had a very young appearance for age, looking more two or three years in age than 4 ½ He is of mixed/diverse ancestry. He began dietary intervention at age **4 years and 4 months.** <u>16 week evaluation</u>. He is reported as less hyperactive particularly regarding climbing on furniture and throwing things down the stairs and jumping. He is crying less and more patient. Eye contact is better

and he will look now most times when he is called unless he is engrossed in play. He will now initiate eye contact to gain attention. Mood is generally good. He is a much happier child nowadays. Parents say he used to look deprived of something. He is starting to smile back when we catch his eyes and smile at him. He has more facial expression, I have seen him look shy, sad and scared at the supermarket also afraid, happy and gleeful – especially when he manages to do something without assistance. He can imitate some sounds and words with reinforcement but spontaneous speech and appropriate vocalization is rare. His social relationships have improved, he is more friendly with his cousins. Shakes hands with strangers and is less afraid. His activities and play are more appropriate and he has lost Upon meeting this child a second time, his growth in height was significant, he was social and charming. Still quiet with few words and use of words was encouraged with reinforcement. It was reported that spontaneous appropriate vocalization was rare.

44. Male. Birth trauma is reported, long labor and mycelium swallow/aspirate. He was noted to have also severe jaundice. He is the middle child. He began dietary intervention at age **10 years and 6 months**. When we first met this young man he was held tightly to his mother's side. He displayed intense water obsession which pretty much consumed his attention. He paused occasionally from attempting to reach a water source to eat greens and would take leaves from any plant her passed and put them into his mouth. His facial expression was vague, but smiling. 8 week evaluation. Behavior has improved he responds faster and better to instruction. Eye-contact is better and he is more observant. There is less humming sound and sometimes he says 'ah' sound but still unable to imitate except bye and apple. Mood now he expresses, if he doesn't like he makes an angry sound or maybe he feels irritated inside. If we go outing he will scream if he doesn't want the particular place. No changes in facial expression but sometimes he responds to mother's smile (if I say something and then smile).No changes in vocal expression. He still doesn't like to be touched. If I put my hand on his shoulder while we walk he will use his hand to push my hand away. Before the diet if I did the same he will just move away from me. Activity :now he will cry if we force him to do activity. I still force him to do things as most of the activities he doesn't want to do. He will do for Mom but will ignore most others. Obsessions: still plays with the string. Relationship to food is ok! At times during dinner he will now feed himself with the dishes on the table then he will take the food out from his mouth with his finger and sometimes spit it out. Appetite is good but now he eats less food in the evening. Most of the time he will have left over food in his plate. He appears satisfied. Better response to unusual sound now. e.g. the first time he heard me turn on the blender, he ran to the kitchen to see. The first few days when he started the diet, he had very loose stool, 4-5 times pass motion. Now he still only has loose stool occasionally. Skin has improved. Sometimes itching of the genital area. Fever is less frequent now, since on the diet he had once only which lasted only for 2 days before it will be on and off for few weeks. He has more stamina, he can walk for long distant, good appetite. 16 week evaluation. No significant further changes noted. Family reports less OCD behavior, increased attention and more social interaction with siblings. Better relationship to food. When we met him the second time he was no longer ingesting plants and not nearly as obsessed with water. We were able to spend a whole day with him and his family shopping at a local mall. He was interacting well with his younger sister who seemed to have a way of playing with him and communicating which transcended verbal language.

45. Male is the oldest of two children. Pre-consultation information included: He was treated for bladder infection at age 1 year, he presented with blood in the urine. He suffers from frequent colds and flu, diarrhea and low muscle tone. Pre-consultation information includes he his allergic to dust and grass. Dairy is his favorite food but it causes bowel irritation. He does not raise eye brows, has a blank expression, squints, does not make eye contact, has some visual fixations, does not blink, does not look in the direction of sound stimulus. He rarely smiles and appears to have a limited ability to control facial muscles. Upper lip area appears as numb. He chooses to be alone and is self-entertaining. He does not point. He expresses desires through temper tantrum. He is echolalic, babbles and uses some few words. He has no regard for personal space and demands to be carried. He has a fear of mechanical noises. He jumps and moves his fingers in front of his yes in a finger flicking movement but is generally lethargic. He is heard teeth grinding frequently. His obsessions are mainly water, mud, food and music. He has a collection of comfort objects and must carry a comfort object. He had difficulty with feeding in infancy. He smells food, often gags on food, spits out food and has very limited food choices. He likes to bite on his shirt. He won't come to the table. He steals food, escapes and is found in the kitchen and most frequently tries to find banana chips, cookies and potato chips, He hums, throws things to make noise and likes to watch colored lights. He also pulls at the corner of one eye. He lacks stranger and separation anxiety. Enjoys playing with his saliva. He is tactile defensive and has difficulty sleeping. He often over-reacts and is easily irritated. He has unusual fears, the passage

between the kitchen and the dining room. His stool is yellow to light brown. He has had ABA and AIT. He began dietary intervention **at age 7**. 16 week evaluation. No significant changes noted other than improved bowel movement, no more diarrhea.

46. Male is the oldest of two children. Birth was by emergency C-section, fetal distress (full term) presenting with severe jaundice. Pre-consultation information includes ASD diagnosis. Hearing tests are normal. Family provided in-home intervention which resulted in he can now make eye-contact, is able to follow some simple instructions, imitates brush teeth. He now expects praise for positive behavior, he initiates physical contact with parents and infant sibling. Smiles more often, is showing interest in the computer. He displays separation anxiety. He is non-verbal, not potty trained and likes to throw things to make loud sounds. Seems to lack interest in communicating. Appears afraid to sit in a group. Demands to be carried. Has a self selective diet which is mainly bread, biscuits and milk. He began dietary intervention at age **3 years and 1 month.** 8 week evaluation. He always looks lazy and less responsive in the morning and afternoon, happier and more active at night. When we brought him to a new place or shopping centers, he likes to walk by himself and without any specific direction. When we removed milk he looked "weak", lazy and slow in response for the first week. Now, he seems to have a better appetite and back to his normal activity level. He has good eye-contact except when he is tired or when he is at a new place. At shopping centers, he tends to look out of the corners of his eyes and at lights more often. More vocal in his own language (his babbling is clearer) but still not able to express in proper words. He is moody in the daytime but happier at night. – Smiles more often, expresses anger, frustrations by shouting (he used to be very 'cool', hardly expressed his emotions in the past). He shouts and cries to express his anger and frustrations especially during the ABA sessions. He appears happier and friendlier when more people come to our house especially the grand parents, uncles and cousins. He will approach the grandmother and to be hugged when he is being called. Kisses his younger sister, maid and mother. He is selective in school, his teacher commented that he is aloof in school. He uses body language to express anger, frustrations and needs (e.g. food , passed motion etc). He is more willing to sit in the group when instructed by his teachers, playing ball with his father (pick up and throw back). He can sit on the chair to complete the allocated tasks for 45 minutes to one hour with his father i.e. can identify the shape of numbers and alphabets and put them in the allocated spaces. Obsessions – towards electronic gadgets which are colorful and produce sound i.e. computer, VCD player, TV. He has shown more interest in new food but still avoiding vegetables. His appetite is better and with bigger amount of intake. He is annoyed when the environment is noisy, highly sensitive to advertisements which displayed aggressiveness and loud noise. He will just awake from his sleep and hide in a corner if he happened to hear those advertisements. He is attracted to bright lights displayed in front of the advertisement posters at the shopping complexes. Stool is brownish and yellowish. He has been gaining weight. Skin is excellent (eczema once in infancy). Fever – twice in November '02 after we removed egg yolk, yeast and wheat from him. His asthma is also under control with the medication. 16 week evaluation. He is reported to act as bored with food. No longer hyperactive and more sensitive and emotional especially towards scolding. More socially interactive. A striking feature when we met him included shiny (metallic sheen) to hair. When we met him a second time his hair was no longer shiny – metallic in appearance.

47. Male was noted to have severe jaundice at birth. He is the oldest of two children. He began dietary intervention **at age 9.** Pre-consultation information include he does not raise his eye brows and does not make eye-contact. He lacks facial expression. Chooses to be alone and is self-entertaining. He sometimes has temper tantrum and expresses his desires through temper tantrum. He can use single words and short sentences as well as incoherent babbling. He very much likes video movies. He uses some phrases repetitively such as 'Where is my food' imitating a line from his Bugs Life video. He is demanding, is very fast and escapes easily. His obsessions are primarily books, motor transport and DIY tools. He smells food, touches food and eats with his hands. He also eats some non-food items such as toothpaste. He only drinks water. He is angered by sneezing sound. He lacks separation and stranger anxiety when he wants to escape or run away but is otherwise very attached. He has unusual sensory inspection and likes to smell and scratch things. He has a high tolerance for pain. He is easily agitated, screams and can be aggressive and unpredictable. Stool is soft and yellow in color. He has been gluten free and casein free for three years. 8 week evaluation. He can be quite angry and aggressive at times. Other times okay. Less hyper. He will still run away if he has the opportunity. Lost him a few times in the last 2 months. Eye-contact is a little bit better. A bit more spontaneous speech and speech is slightly clearer. Still some mood swing here and there. Can be happy one moment, and upset the next. A bit more interested in what other children are doing. New obsessions - stimming with sequencing cards. For about 2 weeks was obsessed with neatness when doing writing.

Will erase the written number many times if he did not write properly. Now doesn't care so much about it anymore. Obsessions with car magazine is less. He wants to try new food but appetite is about the same. Generally healthy. Wounds heal quite fast.

48. Female whose parent reported increasingly limited diet as she responded poorly to more and more foods. Implemented lutein free **diet at age 10.** 8 week evaluation. Behavior - more willing to listen to reason. Eye contact - much improved. Speech - not much unless she wants to but we observe that she is more able. A lot of babbling . She still has mood swings but I think it is due to hurtful remarks made by siblings and cousins as understanding and listening skills improve. The terrible threes at 10. No longer the blank look unless she wants to escape from therapy or questioning. Vocal expression is loud although still garbled. Social Relations - about the same but better behaved. Movement and body language - more stable and likes to swing more than usual. Activity- able to watch and respond to Disney cartoons, wasn't interested before - only to Barney and Sesame Street Obsessions - easier to break. Weight is increased. 16 week evaluation. Able to tolerate more foods, less food allergy than before lutein free diet. Whole family is using the diet plan with reported positive results for ADHD sibling brother and ADD parent. Her family was very pleased that she was now ale to take and ever increasing number of foods. We met this lovely young lady after she had been using the diet recommendations for four months. She was charming, modestly sociable, tolerated the intrusion well. She was making sentences such as *name* is a clever girl, *name* is a pretty girl.

Addendum – the following are early reports of results for the second group

Female
Began dietary intervention at age **4 years and 6 months.** Parent reporting is a medical doctor, surgeon. 8 week evaluation. She still has sideway swaying of the head and sometimes resistance to formal teaching Still no speech. Going to public area - she gets too excited to sit still and still no respect to others personal space and things. Shows temper when being commented for bad behavior, but no tantrum. Stranger anxiety at times. When given the wrong food will cause transient return of flapping, racking, turning and sleep problem and these resolve in 2-3 days after removal of the offending food. She has put on weight and height. No more flapping. Less sideway rocking. Good eye contact. Better sleep pattern. Active and enjoying the play ground. She is able to dress herself- still not able to understand right-left and front-back concepts. Understand two step command - only if she is in good mood. Has some sense of fear of injuring self now. Gait has improved to near normal. Play more imaginative games by her own - last week she even played peek a boo with her 11 months old brother – only thing is she keep the blanket on his face for quite a long while before she lifts it. She imitates house chorus- taking out the rubbish to the rubbish bin, mop the floor, ironing the clothes, washing the vegetables , putting her book into her school bag - of course with a lot of mess sometimes. Identifying and sorting simple shapes and color much faster now. The teacher at school and her occupational therapist also notice the dramatic changes. Emotionally much more stable and happy most of the time. Her smiles are sweeter and she is starting to show sibling rivalry in trying to get her parents affection. .

Female was jaundice at birth and displays café au lait birth marks. She began dietary intervention on **her 6th birthday**. 2 week update. She has been more verbal since she came back after we stopped her from eating bread, biscuits, cakes, cheese, carrots and broccoli. She is also more attentive and able to hear and comply with most of the instructions given to her even though it's only in a couple of days time. Just share with you one incident that happened today. I had managed to find rice biscuits for her today. I told her to say the word "OPEN" when she wanted to eat the biscuits, for three times 'continuously' (she ate 3 packets) she said "OPEN" though not very loud. This is something that had not happened before. She's also able to repeat some words (even though I did not ask her to repeat after me). As a mother who takes care of her everyday, this is something I can say is a breakthrough. Thank God for using you all to help us parent our autistic child. And thank you for your prayers too. I believe with God's help and your advice, she will grow up beautifully in every way.

Male. Began diet just prior to turning 15 years old. Behavior: calmer; still does not have good knowledge of social norms like not going up to a stage during a concert to find out what it is like in the wings of a stage. Less biting of the back of his hands. More self-controlled. Eye Contact : better. Speech : Speaks more with some prompts, able to speak in sentences with familiar persons like immediate family members and speech therapist. Mood : Likes to go out more often instead of staying at home. Facial Expression: More cheerful. Vocal Expression : Speech still is a bit slurred and he has to make a conscious effort to speak clearly. Social Relations: Likes to be doing what everyone else is

doing. Likes holding hands although he could not stand still during circle time. Can be left at a friend's place without causing any disruption in the home of the friend. Movement and body language : ok, learning to play badminton, swimming and Horse riding. Activity : As above . One of his favourite things that he would like to learn is to learn to drive a car and to learn to ride a horse well. (his own words). Obsessions : Flicking his fingers every now and then although sometimes this does not take place at all. Relationship to food : Can abstain from food that is bad for him. He ate a sweet bun once at a science camp for children and immediately lay down on the carpet in the auditorium during the break. Asked him later why and he told me that he had a headache. Told him that is what happens when he eats things made of wheat. Brought him to the bakery after swimming but he did not crave for sweet stuff but settled for muruku which is from rice flour, etc. (non wheat ingredients.) Appetite: Ok but not overwhelming. Sound sensitivity: Less sensitive to sounds on a selective basis. He will put his fingers in his ears when listening to a song by one of the talent time participants but he puts down his hands when the catwalk and the jazz dance by other participants were shown with loud music. Light sensitivity: He tends to close his eyes sometimes at certain places. Stool : Regular - twice a day. Skin : Does not scratch his skin so much although he does rub his skin when he perspires.