Walsh Research Institute

- Nonprofit organization
- Expertise in behavior disorders, ADHD, autism, depression, schizophrenia, bipolar disorder, and Alzheimer's
- International physician training
- Research
Origins of Behavior Research

- Volunteer at Stateville Prison in Illinois,
- Coordinated 125 volunteers,
- Prisoner visitation,
- Aid to abused prisoners,
- Chess league,
- Prison Art Shows,
- Ex-Offender program.
The ex-offender program involved close contact with families that had produced a criminal,

Many criminals had been raised in homes with siblings who became law-abiding, productive citizens.

Many parents reported their future criminal was alarmingly “different” from birth – oppositional, defiant, behavior explosions, cruel to animals, fascination with fire, obsession with weapons.
1975 Question: What is the Cause of a Severe Behavior Disorder?

- Widespread belief in the tabula rasa (blank slate) theory: dominance of life experiences,
- Adoption & twin studies indicate inborn predisposition for schizophrenia, bipolar disorder, clinical depression, autism,
- New focus on neurotransmitters, receptors, chemical imbalances for mental disorders.
Chemistry studies of convicted felons initiated at Argonne National Laboratory.

Study of death row residents & other violent offenders revealed unusual levels of Cu, Zn, Pb, Cd, Mn, Na, K, Li, Co.

Similar chemical imbalances found in behavior disordered children.
Argonne Sibling Experiment

**Test Group**
24 violent males
Age range: 8-18 years
Multiple violent incidents

**Controls**
24 brothers, living in same domicile
Age range: 8-18 years
No violence or delinquency
Results of Sibling Experiment

- Most controls exhibited expected levels of metals;

- Most violent subjects had abnormal levels of Cu, Zn, Mn, Pb, Cd, Na, K, Ca.

- Two distinctive patterns in violent subjects:
  - Type A: Elevated Cu, Cd, Pb
    Depressed Zn, Na, K, Li, Co
  - Type B: Elevated Na, K, Cd, Pb, Mn
    Depressed Cu, Zn, Li, Co
Family Survey of Violent Siblings

**Type A Subjects:** Episodic violence, genuine remorse, high incidence of ADHD, LD, and academic underachievement.

**Type B Subjects:** Oppositional, defiant, cruel, assaultive, high pain threshold, fascination with fire, obsession with weapons.
Double-Blind, Controlled Field Test (n=192)

Test Group: 96 extremely violent prison residents, ex-convicts, and assaultive children.

Controls: 96 non-violent males, matched for age and socioeconomic level in childhood.
Field Test Results

- Results of sibling experiment confirmed

- Type A & B patterns predominate in violent cohort; Most controls exhibit expected trace metal levels.

- P < 0.001

Conclusion: Most violent persons exhibit abnormal metal metabolism.
Early experiments led to clinical treatments for BD and ADHD

- Carl Pfeiffer and Walsh developed test protocols and early nutrient therapies for ex-convicts and violent children.

- Thousands of reports of improved behavior control and academics.

- More than 10,000 BD patients and 5,000 ADHD patients treated under this system.
Massive Chemistry Database for Behavior Disorders and ADHD

- More than 1.5 million blood/urine/tissue test results for persons diagnosed with behavior disorders and/or ADHD.

- Striking chemistry differences between these populations and the rest of society.
High-Incidence Imbalances in Behavior Disorders and ADHD

- Overmethylation
- Undermethylation
- Zinc Deficiency
- Copper Overload
- Folate Deficiency or Overload
- Pyrrole Disorder
- Toxics
- Glucose Dyscontrol
- Malabsorption
Forensics Cases

- James Oliver Huberty
- Charles Manson
- Richard Speck
- Henry Lee Lucas
- Patrick Ryan
- Patrick Sherrill
- Ludvig van Beethoven
- Twenty other notable cases
Examples of Forensics Findings

- James Huberty: Cd poisoning; mild Type B
- Charles Manson: Severe Type B chemistry
- Richard Speck: Type A chemistry
- Henry Lee Lucas: Severe Type B chemistry
- Patrick Ryan: No abnormalities detected
- Patrick Sherrill: Pb poisoning, Type A
- Beethoven: Severe Pb poisoning.
Welcome to the Advanced Photon Source
Lead levels in Beethoven samples
Biochemical Individuality

- Humans exhibit great diversity in blood and brain chemistry.

- Because of genetics and epigenetics, most people are deficient in several nutrients and overloaded in others.
Nutrient Deficiencies that Impair Brain Function

- Zinc
- Methionine
- Folic Acid
- Vitamins B-6 and B-12
- Niacin/Niacinamide
- DHA, EPA, AA (essential fatty acids)
- Antioxidants: Se, GSH, Vitamins C & E, etc.
- Chromium
Nutrient Overloads that Impair Brain Function

- Copper
- Folic Acid
- Iron
- Methionine, SAMe
- Toxics: Lead, Mercury, Cadmium, etc.

NOTE: Multiple vitamin-mineral supplements are usually ineffective for BD, ADHD, and can cause harm.
Individualized Nutrient Therapy

- Medical history and review of symptoms,
- Special blood/urine lab tests,
- Diagnosis of chemical imbalances,
- Prescribed nutrient program aimed at normalizing brain chemistry.
Frequently Asked Questions

1. How can vitamins, minerals, or amino acids significantly help an ADHD or behavior-disordered child?

2. Don’t you really need a powerful drug to get the job done?
The Power of Nutrients

1. Neurotransmitter synthesis

2. Epigenetic regulation of gene expression

3. Reuptake processes at synapses

4. Antioxidant Protection
The Brain Is a Chemical Factory

- Serotonin, dopamine, and other NT’s are synthesized in the brain.

- The raw materials for NT synthesis are nutrients: vitamins, minerals, and amino acids.

- A genetic or epigenetic imbalance in a nutrient needed for NT synthesis or regulation can result in serious mental problems.
Serotonin Synthesis

5-Hydroxytryptophan $\xrightarrow{\text{L-Amino Acid Decarboxylase}}$ Serotonin $\text{+ CO}_2$
Norepinephrine Synthesis

DOPAMINE

Dopamine β-Hydroxylase

Cu++, Vitamin C, O₂

NOREPINEPHRINE
Dopamine Synthesis

L-DOPA → DOPAMINE

L-Amino Acid Decarboxylase
PLP (Vitamin B-6)

+ CO₂
Pyrrole Disorder

- Double deficiency of B-6 and Zinc
- Reduced Serotonin, Dopamine, GABA
- Depletion of GSH, MT, Cys, SOD, Catalase
- Supplements of B-6 and zinc can normalize pyrrole levels, often resulting in elimination of symptoms and the need for psychiatric medication.
Methylation and Mental Health

- Methyl is a dominant factor in epigenetic processes,

- Methyl has a powerful impact on neurotransmitter activity at synapses,

- More than 50% of ADHD and BD persons exhibit a serious methylation disorder,
DSM-5 Behavior Disorders

- Oppositional Defiant Disorder
- Conduct Disorder
- Intermittent Explosive Disorder
- Antisocial Personality Disorder
- ADHD
Oppositional-Defiant Disorder

- Undermethylation (95%)
- High blood histamine (90%)
- Folate intolerance (90%)
- Low homocysteine
- Low ceruloplasmin
- Depleted levels of Zn, B-6, Ca, Mg
- Lead, cadmium, mercury overloads
- Elevated oxidative stress
Conduct Disorder

- Pyrrole Disorder (55%)
- Over-Methylation (18%)
- Under-Methylation (62%)
- Disordered Metal-Metabolism (90%)
- Toxic Metal Overload (75%)
Intermittent Explosive Disorder

- Elevated Cu/Zn ratio in blood (90%)
- Pyrrole Disorder (30%)
- Overmethylation (45%)
- Elevated toxic metals (85%)
Antisocial Personality Disorder

- Extreme narcissism (lack of empathy)
- Engaging personality
- Good verbal skills
- Hypersexuality
- Easily enraged, especially after alcohol
- Fearless use of illegal drugs
- High pain threshold
- Low regard for the general population
- Impulsivity without regard for consequences
Antisocial Personality Disorder

- Undermethylation (98%)
- Zn and B-6 deficiency (85%)
- Elevated lead, cadmium, mercury
- Glucose dyscontrol
- Low serum ceruloplasmin
- Depressed blood spermine
High Incidence Chemical Imbalances Observed in ADHD

- Elevated Cu (68%)
- Insufficient ceruloplasmin (92%)
- Zinc depletion (96%)
- Methylation disorder (55%)
- Pyrrole Disorder (30%)
- Malabsorption (11%)
Treatment Approach for Disordered Metal-Metabolism

- Supplementation with metals found to be in deficiency (Zn, Mn, etc.)
- Elimination of excess copper & toxic metals
- Aggressive Zn & B-6 therapy for elevated pyrroles
- Metallothionein-Promotion Therapy
- Augmenting nutrients (Vitamins C, E, B-6)
Pyrrole Disorder Symptoms

- Inability to cope with stress
- Episodic rages of long duration
- High Anxiety
- Poor short-term memory
- Sensitivity to bright lights and loud noises
- Abnormal fat distribution
- Academic underachievement
Effective Nutrients for Pyrrole Disorder

- Vitamin B-6
- Pyridoxal-5-Phosphate
- Zinc
- Manganese
- Primrose Oil (Arachidonic Acid)
- Vitamins C, E
Effective Nutrients for Undermethylation

- Methionine
- SAMe
- Calcium
- Magnesium
- B-6
- Serine
- Vitamin D
Effective Nutrients for Overmethylation

- Folic Acid
- Vitamin B-12
- Niacin or Niacinamide
- Vitamin C
- Zinc
- Vitamin B-6
- Manganese
- DMAE
Effective Nutrients for Heavy-Metal Poisoning

- Zinc
- Calcium
- Selenium
- Glutathione
- Manganese
- Vitamins B-6, C, E
- Metallothionein-Promotion
Outcome Study – Violent Behavior

- 207 behavior-disordered subjects

- Identification of biochemical imbalances -- individualized nutrient therapy to correct imbalances

- Measurement of frequency of physical assaults and property destruction before & after treatment
Outcome Results - Compliance

- 12% failed to initiate treatment.
- Additional 11% stopped compliance during early treatment.
- The remaining 77% achieved significant compliance throughout the testing period.
Treatment Outcomes:
Compliant Assaultive Subjects

- Symptom-Free: 58%
- Partial Improvement: 33%
- No Change: 8%
- Worse: 1%
Treatment Outcomes
Compliant Destructive Subjects

- Symptom-Free: 53%
- Partial Improvement: 35%
- No Change: 9%
- Worse: 3%
Chicago Inner-City Project

- National Recreation Foundation funding
- K-8 School in high-poverty area
- 33 at-risk children, ages 5-14
- History of violent behavior or severe ADHD
- Nutrient therapy prescribed for chemical imbalances based on lab work and medical history
- Measurement of behavior/academic outcomes based on teacher/parent reports and Iowa Basic Skills testing.
Inner-City Project Results

- Teachers/parents reported 81% of violent children had greatly improved, with many cases of a complete “turnaround”.

- Special-Ed staff reported 71% of the ADHD students achieved academic improvement.

- Surprising result: The inner-city families achieved higher treatment compliance than that of wealthy suburbs and rural areas.
Individualized Nutrient Therapy

- Medical history and review of symptoms,
- Special blood/urine lab tests,
- Diagnosis of chemical imbalances,
- Prescribed nutrient program aimed at normalizing brain chemistry.
Nutrient Therapy Outcomes

- Separate nutrient therapies developed for each biochemical imbalance,

- Outcome studies reveal 80% of patients report treatment effectiveness & ability to reduce or eliminate medication.
Case History: Mike

- Father in prison; mother a recovering alcoholic.
- At age 12: oppositional, defiant, cruel to animals, truant, and assaultive.
- Dx: ODD, Antisocial Personality disorder.
- Head of youth gang -- major thefts.
- After 3 months therapy, he became well-behaved and a straight-A student.
- Family moved to Kansas to give Mike a fresh start.
Case History: Brian

- Adopted son of dedicated & capable parents,
- At age 16: violent, destructive, truant, failing academically,
- Severe pyrrole disorder (Zn/B-6 deficiency),
- After normalizing plasma Zn, he became calm, ceased truancy, became an honor student & joined football team.
- Became a college student instead of a high school dropout.
High-Incidence Chemical Imbalances in ADHD

- Elevated Cu (68%)
- Insufficient ceruloplasmin (92%)
- Zinc depletion (96%)
- Methylation disorder (55%)
- Pyrrole Disorder (30%)
- Malabsorption (11%)
ADHD Case History: Danny

- Son of prominent scientist (physicist),

- At age 8, diagnosed with ADHD/LD: Special Education and Ritalin recommended,

- Disability disappeared within 2 months of nutrient therapy,

- Danny became superior student and entered graduate school at age 19.
Chemical Biotypes of Depression and Individualized Nutrient Therapy

W. J. Walsh, PhD and R. A. deVito, MD
Mainstream Psychiatry Misconception

- Depression regarded as a single entity with variations along a central theme.

- Central Belief -- Low activity at serotonin receptors.

- Treatment of choice -- SSRI antidepressants to elevate serotonin activity at synapses.
Chemical Classification of Depression

- My large depression database has identified five high-incidence biotypes,

- The biotypes represent very different disorders, each with unique neurotransmitter imbalances and symptoms,

- Separate treatment approach needed for each biotype.
Phenotype #5
Low-Folate Depression

- Tendency for high anxiety, panic
- Non-competitive in sports or games
- Absence of inhalent allergies
- Food/chemical sensitivities
- High musical or artistic ability
- Underachievement
- Sleep disorder
- Low libido
- Adverse reaction to SSRI medications
School Shooters – A consistent pattern in 50 cases since 1990

- OK behavior during formative years,
- Onset of depression during teen years,
- Treatment with SSRI antidepressants,
- Depression worsens & suicidal ideation begins,
- School shooting often followed by suicide.

**Conclusion:** Strong association between SSRI drugs and school violence.
SSRI Antidepressants

- Increase serotonin activity in brain -- Generally effective for undermethylated and pyrrole-disorder depressives (53%).

- Can cause suicidal & homicidal ideation in low-folate depressives, especially young males.

- Inexpensive blood tests can identify persons who must avoid SSRI antidepressants.
Proposal for Preventing School Violence

1. Mandatory blood testing prior to SSRI treatment for young males.

2. Prohibition of SSRIs for low-folate patients.

Summary of Behavior Outcomes (Violent Offenders)

- Disappointing results for adult criminals, especially gang members and drug/alcohol abusers. Very few achieve compliance for more than a year.

- Extremely promising results for violent children, including those who exhibit the same chemistry as adult criminals.

- Efficacy for teen offenders is highest for those not yet “hooked” on illegal drugs or alcohol.
1. Identify children at high risk for criminal behavior (this is not difficult).

2. Provide effective treatment before their lives are ruined and society is harmed,

3. Individualized nutrient therapy to correct brain-chemistry imbalances may be our best hope for effective crime prevention.
Pfeiffer’s Law

“For every drug that benefits a patient, there are natural substances that can produce the same effect”.

Carl C. Pfeiffer, MD, PhD
THANK YOU!

Bill Walsh, PhD
Walsh Research Institute
www.walshinstitute.org
Over his impressive career, Dr. Walsh has worked with 30,000 patients with conditions ranging from autism to schizophrenia to Alzheimer’s. His book is an essential tool for anyone who would prefer to heal the brain with nutrients rather than drugs.

Teri Arranga, editor-in-chief, Autism Science Digest

NUTRIENT POWER
HEAL YOUR BIOCHEMISTRY AND HEAL YOUR BRAIN

WILLIAM J. WALSH, PhD