

# MANAGING ATAXIA: SOUP TO NUTS

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THE MAGIC OF A CURE

DREAM IT.  
HOPE IT.

**National Ataxia Foundation**  
Annual Ataxia Conference  
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Hosted by the Southeast Region

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- Susan L. Perlman M.D.
- The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:
- No relationships to disclose or list
- But Dr. Perlman/UCLA has been a site for clinical trials sponsored by Edison, EryDel, Grifols, Horizon, Pfizer, Reata, Shire/Viropharma, and Teva.



# SO, YOU HAVE ATAXIA GETTING IN THE DRIVERS SEAT

Instruction Manual  
\*User Information

It can help to have a co-pilot





# **WELCOME TO MY OFFICE**

- **Obtaining a diagnosis**
- **Selecting your care team**
- **Medication**
- **Exercise**
- **Nutrition**
- **Equipment**
- **Support services**
- **Getting information**



## OBTAINING A DIAGNOSIS

- “I feel off balance, clumsy, dizzy/woozy...” Inner ear, vision, neuropathy.  
Medical or medication issues.
- “I have a tremor...” Do not assume it is Parkinson’s disease (Dr. WebMD).
- “I have had unexplained falls...” Weakness, foot drop, trick knee.  
Fainting, seizures.
- “My father, mother, brother, sister, third cousin twice removed had a walking problem, but it was due to a alcohol, back injury, arthritis, old age...”
- **All of these scenarios deserve a trip to a neurologist for a good neurologic examination and brain MRI scan (or CT scan if you have a pacemaker).**
- **Brain MRI can rule out brain tumor, stroke, MS—and may help rule in ataxia.**

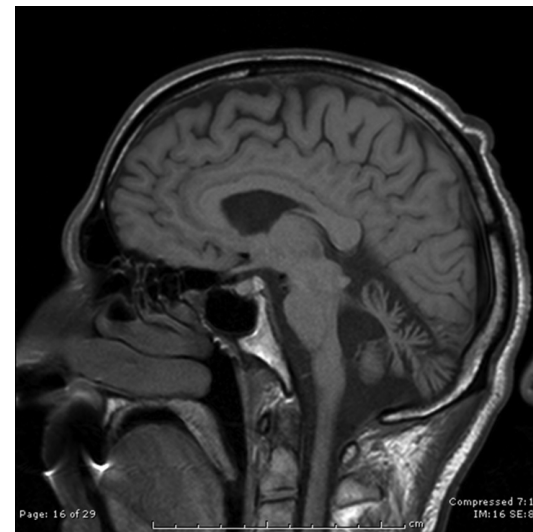
# BRAIN MRI

A small amount of cerebellar atrophy



A large amount of atrophy in cerebellum and brainstem

Mittal and Machado 2014



# OTHER LAB WORK EVERYONE SHOULD HAVE DONE

- Even if you have a strongly positive family history of ataxia, it is a good idea to be checked for a few common, simple, treatable things—or some rarer things that might look like what you have (courtesy of Dr. Brent Fogel):
- A spinal tap might be necessary if an infection, inflammation, chemical imbalance, or spinal fluid pressure problems are suspected.

<u>General Studies (All Patients)</u>	<u>1<sup>st</sup> Line Tests</u>	<u>2<sup>nd</sup> Line Tests</u>	<u>3<sup>rd</sup> Line Tests</u>
[Additional work-up to be directed by age, clinical exam, family history, imaging, and other testing.]	Chem 10, CBC, LFTs, uric acid ESR, ANA, RPR TSH, Hgb A1c, Vit B12, MMA, HC, Folate, Vit E D3 VLCFA, phytanic acid Urine heavy metals	Lactate, Pyruvate, Ammonia, Copper, Ceruloplasmin, ACE, CK, SPEP, Ketones, Fasting Lipids, SSA/SSB, Anti-gliadin (non-deaminated) Anti-GAD Anti-thyroid Lyme, HTLV I/II, HIV CSF Studies (Cultures, IgG synthesis, oligoclonal bands, lactate, other specific tests)	Plasma Amino Acids Urine Organic Acids Lysosomal Screen ----- Brain PET scan MR Spectroscopy Conjunctival Biopsy Bone Marrow Biopsy

## WHO SHOULD HAVE GENETIC TESTING?

<b>Common Adult Genetic Ataxias</b>	<b>SCA1, 2, 3, 6, 7, 8 SCA17, DRPLA FXTAS, FRDA</b>	
<b>Common Pediatric Genetic Ataxias</b>	<b>AT FRDA AOA1, AOA2</b>	<b>AFP, QIGs  albumin, CPK</b>

1-5% of ataxians with no family history may have a common ataxia gene.  
Exome sequencing may uncover more genes.

# THE EFFECTS OF A HIDDEN CANCER

**Paraneoplastic disorders**

**Malignancy workup (CT chest, abdomen, pelvis, mammogram, testicular ultrasound, body PET scan)**

**Paraneoplastic antibody testing (blood or spinal fluid)**

# MULTIPLE SYSTEM ATROPHY

- **80% of MSAs start with Parkinsonian symptoms; 20% of MSAs start with ataxia.**
- **25% of patients with sporadic cerebellar ataxia will go on develop MSA (non-levodopa responsive Parkinsonism, blood pressure instability, early bladder dysfunction) within 5 years of onset of ataxia, especially if >50y/o.**
- **Erectile dysfunction can precede ataxia by 5-10 years.**
- **Notable cerebellar disability is seen within 2-3 years.**
- **REM sleep disturbances, obstructive sleep apnea, and stridor are common.**
- **Uncommon are: onset after age 75, family history of ataxia or Parkinsons, classic pill-rolling rest tremor, chorea (involuntary twitches), slowed or limited eye movements, dementia.**
- **Important to identify MSA early, as there are drug trials in development.**



# SELECTING YOUR CARE TEAM

- **A primary care physician/healthcare provider**
- **A neurologist**

You may see the following only once, but they have important input for ataxia:

- A second opinion neurologist who specializes in ataxia
- A geneticist
- A physical therapist and/or equipment-orthotics specialist
- An occupational therapist
- A speech and swallowing therapist
- A nutritionist
- A social worker or psychologist
- Other sub-specialists for associated problems (ophthalmologist, cardiologist, pulmonary or sleep specialist, pain management specialist)



# MAYO CLINIC STUDY ABOUT WHAT PEOPLE WANT IN A DOCTOR

- Confident: "The doctor's confidence gives me confidence."
- Empathetic: "The doctor tries to understand what I am feeling and experiencing, physically and emotionally, and communicates that understanding to me."
- **Forthright: "The doctor tells me what I need to know in plain language and in a forthright manner."**
- Humane: "The doctor is caring, compassionate, and kind."
- Personal: "The doctor is interested in me more than just as a patient, interacts with me, and remembers me as an individual."
- **Respectful: "The doctor takes my input seriously and works with me."**
- Thorough: "The doctor is conscientious and persistent."



## MEDICATION

- There are still no cures for ataxia, but symptoms can be treated.
- Give any new medication at least a month to work.  
The dose may need to be increased.
- Report side effects right away. You may reduce the dose, but don't stop the medication until you speak with your doctor, unless you are having an allergic reaction.
- Taking care of your general health, exercising regularly, and possibly using an anti-oxidant vitamin, might slow up progression of ataxia.
- Discuss with your doctor any exciting new treatments you may be hearing about...  
before trying them.
- If you are depressed, talk to someone about it and consider medication.
- Goals for all—no falls, no choking, no infections, restful sleep, good energy, no pain.

# DRUGS FOR SYMPTOMS OF ATAXIA

## THESE ARE ALL OFF-LABEL

Reported in the medical literature for ataxia

\*possibly also neuroprotective

- Amantadine
- Buspirone
- L-5-hydroxytryptophan
- Memantine \*
- Physostigmine
- Riluzole \*
- Tandospirone \*
- Thyrotropin releasing factor \*
- Varenicline
  
- Fluoxetine (speech, swallowing) \*
- Meclizine, Scopolamine, Ondansetron (vertigo)
- Acetazolamide , 4-aminopyridine \*, Dilantin, Flunarizine (episodic ataxia)

For tremor, myoclonus, nystagmus

- 4-aminopyridine
- Baclofen
- Carbamazepine
- Clonazepam
- Gabapentin
- Isoniazid
- Levetiracetam
- Piracetam
- Primidone
- Propranolol
- Valproic acid
- Zonisamide
- Botulinum toxin shots
- Surgery, stimulators

# DRUGS FOR SYMPTOMS OF ATAXIA THESE ARE ALSO OFF-LABEL

## For Fatigue

- Pyridostigmine
- Amantadine
- Selegiline
- Methyphenidate
- Modafinil, Armodafinil
- Fluoxetine, Sertraline, other energizing anti-depressants
- Caffeine
- Creatine, Carnitine
- Anti-oxidant vitamins

## Non-drug approaches as well

- Look for other illnesses, drug side effects
- Good nutrition.
- Conditioning exercise.
- Weight management.
- Pain control.
- Sleep hygiene.
- Energy conservation.
- Lifestyle modification.
- Emotional health



**EXERCISE ALWAYS HELPS**  
CONDITIONING, CORE STRENGTH, BALANCE, STRETCHING

- Friday, April 1, 10:30am Physical Therapy  
**Jennifer Keller, PT** *Motion Analysis Lab, Kennedy Krieger Institute Baltimore, MD*
- **Goals of Rehabilitation (PT, OT, Speech Therapy):**
- **safe mobility (including driving)**
- **independence in activities of daily living**
- **intelligible speech or other communication**
- **safe swallow or other nutrition**
- **safe airway**
- **control of deconditioning, fatigue, and pain**



## NUTRITION

- **Weight maintenance.**
- **Supplements for documented deficiencies.**
- **Enough fiber to stabilize bowel function.**
- **Carefully chosen pre-exercise supplements used in moderation, if desired.**
- **Gluten-free diet if you are gluten sensitive—other uses optional.**
- **Other restrictive diets (ketogenic, vegan, etc.) must be assessed by a nutrition specialist to avoid micronutrient deficiencies.**
  
- **There are no diets proven to cure ataxia.**

## EQUIPMENT

- **Sunday, April 2, 10:45am** Using an iPad for Aided Communication: Augmentative and Alternative Communication Options *and Technology*  
**Nancy Harrington, MA, CCC-SLP** *Florida Alliance for Assistive Services*
- **Occupational therapists are helpful for aids to activities of daily living, driver evaluations.**
- **Physical therapists can recommend aids to gait, bracing, mobility devices, transfer devices, appropriate seating.**
- **Videogame playing has been shown to help hand coordination.**





## SUPPORT SERVICES

- Friday, April 1, 11:00am Disability Decisions and Applying  
**Jon Rodis & Kathleen Kane, Esq.** for SSDI *Winthrop, MA*
- Friday, April 1, 11:30am The Ataxia Rollercoaster: How to Have a Smoother Ride with the Ups, Downs & Loop-the-Loops of Life  
**Ellen Sichel, BS** CEO of *Custom Calm, LLS, Atlanta, GA*
- Saturday, April 2, 10:00am Detours Ahead: Life with Ataxia  
**Nygel Lenz** NAF Support Group Leader, *Clearwater, FL*

**Genetic counseling, Psychosocial Counseling, Home Health Assistance, Legal Aid, Support Groups**  
**Disability decisions, insurance issues, financial concerns may require professional help.**



## GETTING INFORMATION

- **The Internet—7 million hits for “ataxia”**
- **National Ataxia Foundation website and its links**
- **ClinicalTrials.gov**
  
- **Your healthcare provider**
- **Your “co-pilot”**
- **Other ataxians—social media; support groups; Birds of a Feather**
  
- **Control the flow of information you are getting so as not to drown.**



## **GETTING INVOLVED TO MASTER ATAXIA**

- **Join the National Ataxia Foundation**
- **Sign up in the Registry**
- **Find a Support Group or Ambassador near you**
- **Explore social media...carefully**
- **Volunteer for studies and clinical trials.**
- **Empower your doctor—if your doctor knows that there are things that can be done, s/he will be a stronger member of your team.**
- **Use information to open dialogues—with family, friends, healthcare providers, fellow ataxians...**
- **Keep a short list of whom to ask when you have questions.**

# QUICK LINKS

- CoRDS **Registry**--<http://www.sanfordresearch.org/cords/>  
The NAF website has a link to this, as well as lists of ataxia doctors.

## **To find a research center near you:**

- CRC-SCA--Phuong Deleyrolle, RN-Coordinator [pdeleyrolle@ufl.edu](mailto:pdeleyrolle@ufl.edu)
- CCRN-FA-- [info@curefa.org](mailto:info@curefa.org) (484) 879-6160 (also has a registry just for FA)

## **To find research studies near you:**

- ClinicalTrials.gov—type in “ataxia” and select “open studies”.  
The first 50 studies that come up are most applicable.
- ClinicalTrials.gov—type in “multiple system atrophy” and select “open studies”.  
The first 30 studies that come up are the most applicable.
- The research centers above should also have information about studies and trials.
- New studies are opening up all the time—natural history, biomarker, genetic, treatment.

# PHARMACEUTICAL COMPANIES WITH ATAXIA DRUGS IN THE PIPELINE

- Anavex
- Astra-Zeneca—MSA (currently active)
- Ataxion
- Bioblast
- Biohaven
- EryDel—A-T
- Ionis
- Steminent
  
- And others that have not yet gone public.

## Primary target is FA--

- BioMarin
- Chondrial
- Edison
- Gene therapies—Annapurna, Voyager, Agilis, Bamboo, IGBMC
- Horizon
- RaNA
- Reata
- Retrotope
- Shire/Viropharma
- STATegics



# LOCATIONS FOR THE ASTRA-ZENECA MSA DRUG TRIAL

- **Contact: AstraZeneca Clinical Study Information Center 1-877-240-9479**  
[information.center@astrazeneca.com](mailto:information.center@astrazeneca.com)
- **Stanford**
- **New Haven**
- **Tampa**
- **Boston**
- **Ann Arbor**
- **Rochester, MN**
- **NYC**



# PARTNERS IN CLINICAL NEUROGENETICS RESEARCH AT UCLA

- Daniel Geschwind, M.D., Ph.D., Neurogenetics Program Director (Molecular Genetics)
- Susan Perlman, M.D., Director, Ataxia Clinic (Ataxia Database, Drug Trials)
- Brent Fogel, M.D., Ph.D. Associate Director, Neurogenetics Program; Director, Neurogenetics Clinic; Director, Ataxia and Neurogenetics Biobank Program(Molecular Genetics)
- Robert Baloh, M.D. (Neuro-Otology)
- The George Bartzokis, M.D. Group(Neuroimaging, Biomarkers)
- Yvette Bordelon, M.D., Ph.D. (Huntington's disease, Biomarkers, Drug Trials)
- Stephen Cederbaum, M.D. (Medical Genetics, Metabolic Disorders)
- Giovanni Coppola, M.D. (Molecular Genetics)
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- Joanna Jen, M.D., Ph.D. (Episodic Ataxias, Drug Trials)
- Arik Johnson, Psy.D. (Psychology)
- William Oppenheim, M.D., and associates (Orthopedics)
- Noriko Salamon, M.D. (Neuroradiology)
- Ernest Wright D.Sc., Ph.D, Jorge Barrio Ph.D. (Neuroimaging, Biomarkers)
- Brian Clemente Ph.D.— Ataxia Research Coordinator (310) 206-8153
- Nagmeh Dorrani, M.S. — Genetic Counselor (310) 206-6581

# UCLA NEUROGENETICS CLINICAL RESEARCH TEAM





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- Muscular Dystrophy Association and
- Friedreich's Ataxia Research Alliance—
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