Living with Early HD

Vicki Wheelock, M.D.

HDSA Center of Excellence at UC Davis

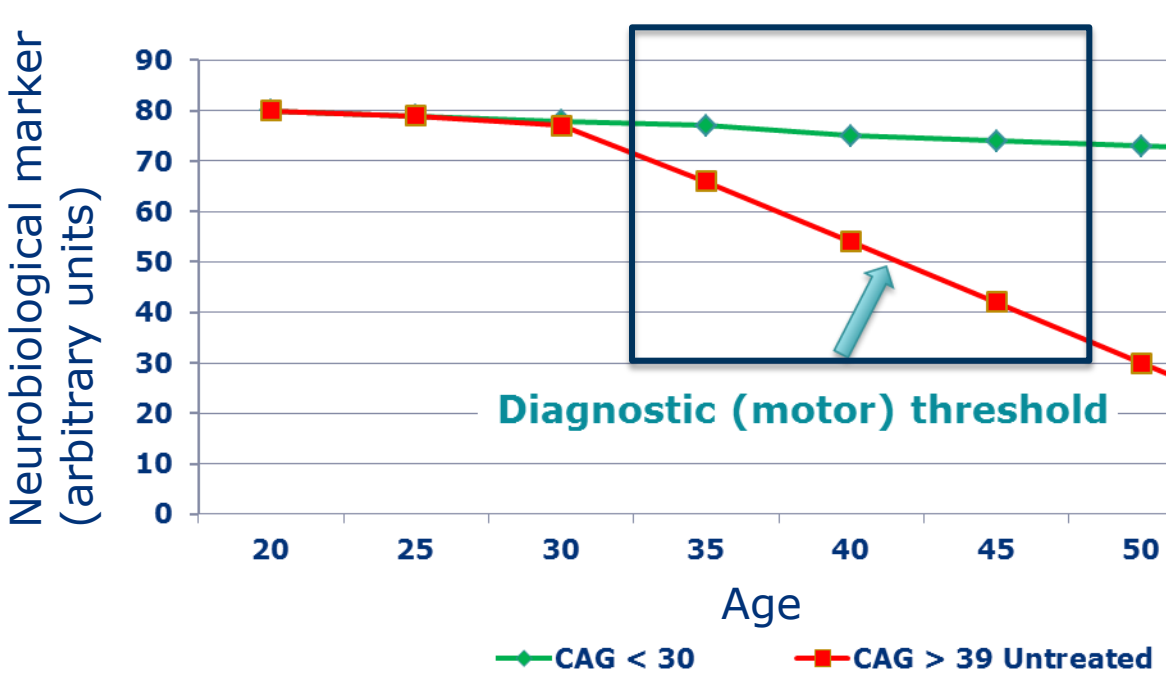
Presented September 13, 2009
World Congress of Neurology Meeting
Vancouver, BC, Canada

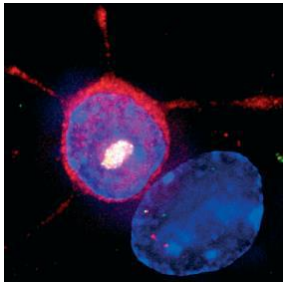
Updated 5/30/2013

Outline

- Definitions of early HD
- Trajectory: from pre-HD to HD
- Scenarios to consider
- Strategies
  - Small changes can make a difference

HD Over the Lifetime





Paulsen JS, Hayden M, Stout JC and the PREDICT-HD Investigators.
Preparing for Preventive Clinical trials: The PREDICT-HD study. *Arch Neurol* 2006;63(6):883-890

Huntington Disease Stages: Functional rating scale

Stage 0: Pre-HD

Stage 1: Slightly lower performance at work; independent at home

Stage 2: Can still work (lower level), still mostly independent at home

Stage 3: Difficult to work, starts to needs help with financial, home activities

Stage 4: Unable to work. Needs major assistance with care

Stage 5: Full-time nursing care required

Adapted from Shoulson et al, Quantification of Neurological Deficit, Boston:Butterworth,1989

Total Functional Capacity (TFC) Score

Abilities to:	Points
Work	0 - 3
Handle finances	0 - 2
Do home activities	0 - 3
Perform self-care	0 - 3
Live at home	0 - 2
TOTAL SCORE	**0 - 13**

HD Staging	Points
Stage 1	11 - 13
Stage 2	7 - 10
Stage 3	4 - 6
Stage 4	1 - 3
Stage 5	0

TFC declines by 0.7 units/year

Marder et al, *Neurology* 2000;54;452-8

Symptoms in Huntington's disease

Impulsivity

Balance Problems

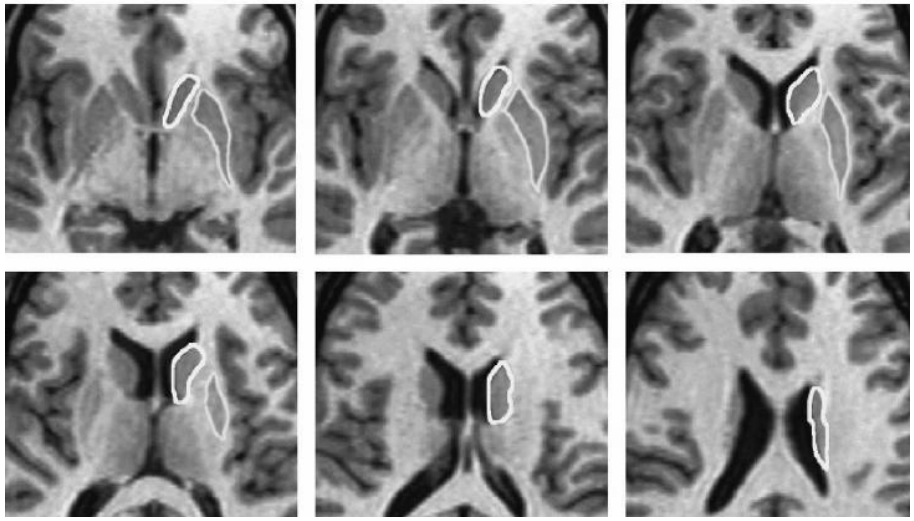
↓Creativity

Slow Eye Movements

Episodic Anger, Irritability

Slowness of Movement

MRI views of Striatum



Aylward EH. *Brain Res Bull* 2007;72:152-8

Depression, Anxiety

Trouble Swallowing

OCD Psychosis

Chorea: Involuntary Movements

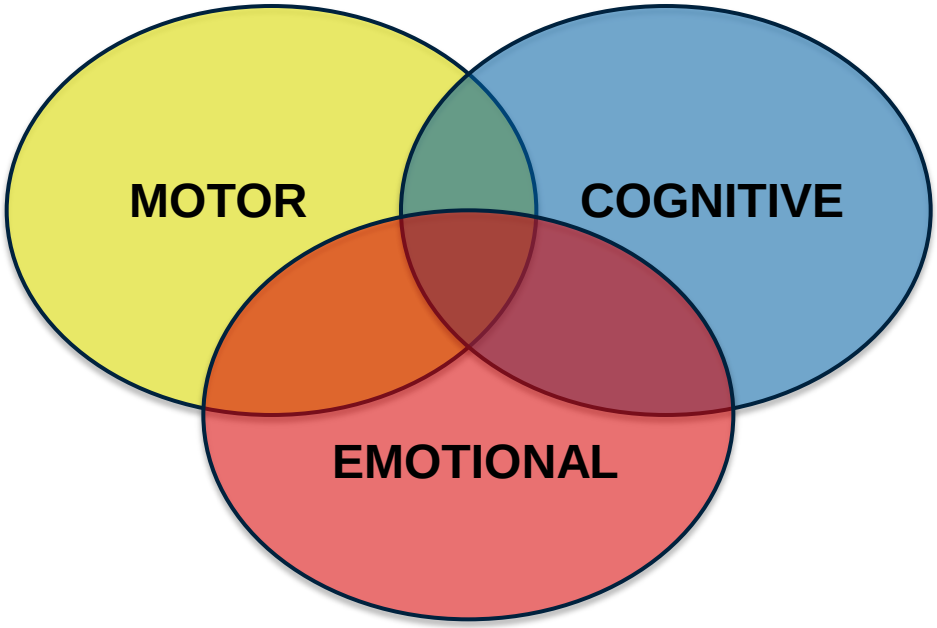
↓Multi-tasking

Restless, Fidgets

↓Organizing Concentrating Prioritizing

↓Fine Motor Tasks

The Transition from Pre-HD to HD



Current clinical definition: Clear presence of a movement disorder.

But……brain changes and other symptoms start years before.

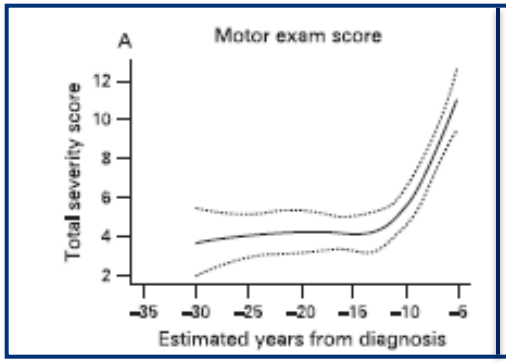
Studies in Pre-HD: Predict-HD

- **WHEN:** 2000 – current
- **WHERE:** >20 sites in US, Canada, Australia, Europe
- **WHO:** Participants who know their CAG repeat status, CAG expanded +/-, not diagnosed
- **WHAT:** MRI brain scans, tests of thinking, tests of movement, questions about symptoms
- **Findings:** MRI changes, performance on thinking tests, tests of movement and sensation begin to change at least 10 years before diagnosis

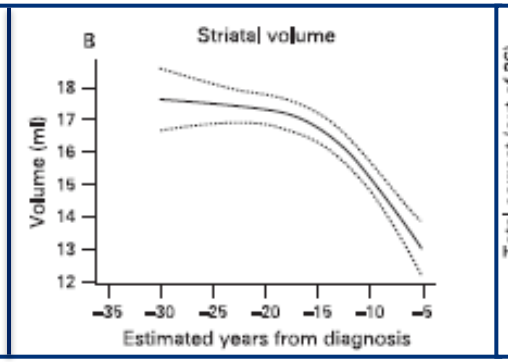
Paulsen JS et al. Detection of HD decades before diagnosis: the Predict HD study. *JNNP* 2008;79:874-80.

Progression

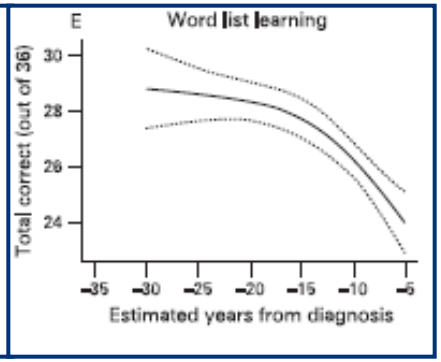
Motor score



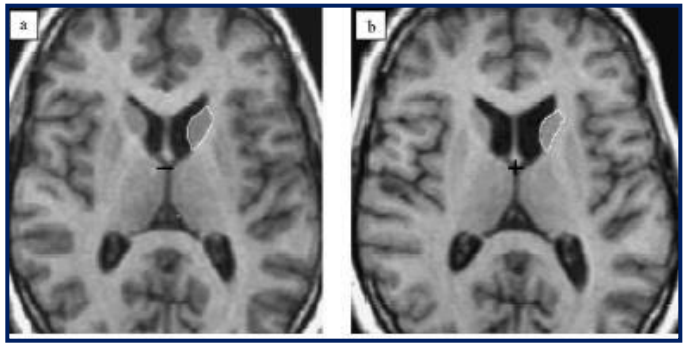
Striatum size



Learning score



MRI scan

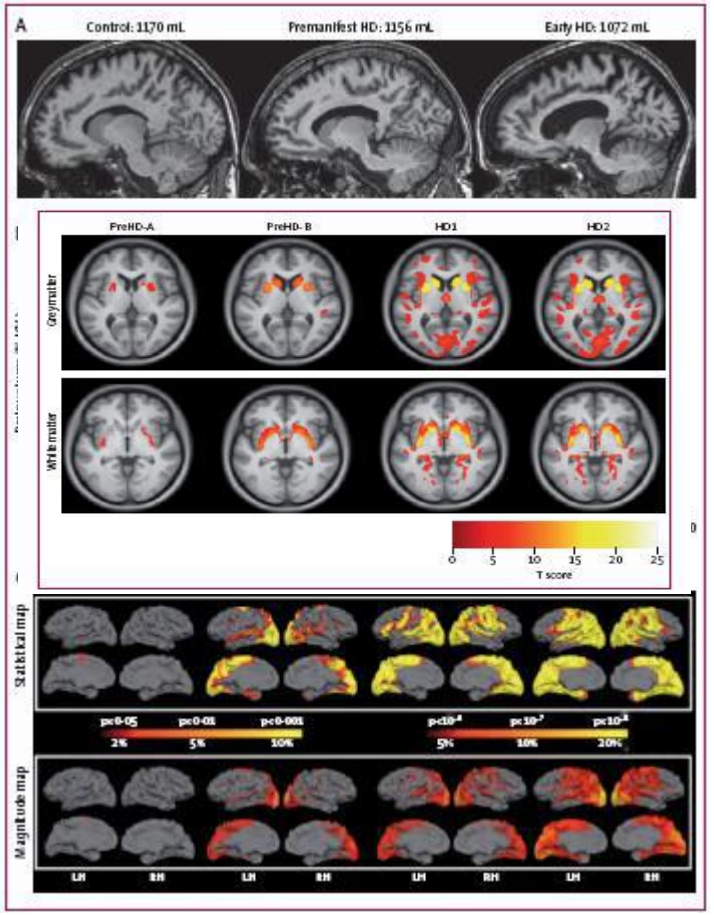


Aylward EH. *Brain Research Bulletin* 2003;62:137-141

At the time of definitive diagnosis of HD, the striatum has already lost 50% of its volume.

Studies in Pre-HD: TRACK-HD

- **WHEN:** 2008
- **WHERE:** 5 sites in Europe, Canada and US
- **WHO:** 336 (People with pre-HD, early HD and controls)
- **WHAT:** Scans, motor, thinking tests
- **Findings**



Tabrizi SJ et a. *Lancet Neurology* 2009;8:791-801

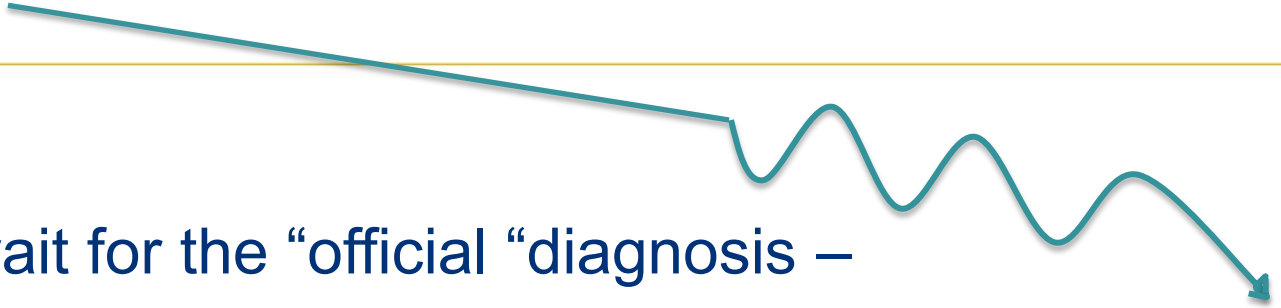
Early HD encompasses the period when symptoms first began to appear, through the time of initial diagnosis into Stages 1 and 2.

- Symptoms:
  - Functional changes at work and home
  - Cognitive changes
  - Mood and behavior changes
- Quality of life begins to change
- Caregiving begins *before* diagnosis

The goals of living with early HD involve maintaining all of the following for both the persons with HD and their families:

- Autonomy
- Dignity
- Meaningful social interaction
- Communication
- Comfort
- Safety and order
- Spirituality
- Enjoyment, entertainment and well-being
- Nutrition

Managing the Trajectory



Don’t wait for the “official “diagnosis –

1. Establish care with an HD specialist if changes are beginning to appear.
2. Access reliable information about HD from recognized advocacy organizations and websites.
3. Take good care of your brain: healthy diet, regular exercise, avoid smoking and excessive alcohol use.
4. Consider volunteering for research: observational studies or clinical trials.

Source: T. Tempkin RNC, MSN, ANP

What about medications and supplements to delay onset or slow progression of HD?

- **Minocycline:** no evidence for benefit
- **Coenzyme Q10:**
  - studies suggest possible benefit
  - demonstrated tolerability in people with the HD gene expansion
  - high dose needed, $$$
  - large multicenter trial now underway (2CARE, Cudkowicz, PI), enrollment closed
  - Pre-HD study completed (PREQUEL, Ross, PI); results will be announced soon
- **Creatine:**
  - studies suggest possible benefit
  - good tolerability in people with the HD gene expansion
  - but high doses can be toxic!
  - Large multicenter trial underway (CREST-E, Hersch PI)
- **Fish Oil (ethyl EPA):**
  - not helpful for chorea
  - Good tolerability in people with the HD gene expansion
  - ?Other benefits?

Scenario 1

A 38 year old woman who tested positive for the HD CAG expansion 5 years ago comes to the clinic to establish care. She has never experienced chorea or clumsiness, but she has had persistent feelings of sadness and hopelessness, sleeps poorly, and has lost weight. She moved from one job to another in the 2 years, and gives vague reasons for the job changes. She admits that she's missed paying some bills on time, and that she doesn't keep her apartment as clean as she used to. She wonders if she might be starting to get symptoms of HD.

What do you think?

Managing the Trajectory: Stage I

Changes

- Still working– but may be stressed or starting to decline in performance
- Still independent at home, but multi-tasking begins to become more difficult
- Emotional symptoms of anxiety, depression, irritability may occur

Strategies

- Stress management
- Adaptations at work
- Allow more time; avoid multi-tasking
- Seek treatment for cognitive and mood changes
- Counseling
- Medications

Scenario 2

A 28 year old man with the HD CAG expansion gets angry at work and assaults a co-worker. He quits that job and is re-hired at another, and no legal problems have surfaced. He denies difficulty with irritability, but his wife reports frequent anger outbursts at home. His neurological exam shows only questionable signs of HD.

What do you think?

Managing irritability and anger

- Establish and stick to routines, schedules
- Look for behavioral triggers; re-direct
- Avoid confrontations and ultimatums
- Limit alcohol
- Limit stimulants (caffeine)
- Consider anxiety or depression as a cause
- If anger is severe and/or frequent, medications will help
- Call authorities if necessary

Paradiso S et al. “Neural bases of dysphoria in early HD. “*Psych Research: Neuroimaging* 2008;162:73-87

Duff K et al. “Psychiatric symptoms in HD before diagnosis: the Predict-HD study,” *Biol Psychiatr* 2007;62: 1341-6.

Scenario 3

A 25 year old woman is brought to the HD clinic by her father. Her mother died of HD in her 30's, and her older sister was diagnosed with HD a few years ago. She's had difficulty keeping a job for the last year or so, and she is more withdrawn and apathetic. Her neurological exam shows that she has mild memory problems, marked slowness in movement, rigidity in her arms, poor balance.

What do you think?

Managing the Trajectory: Stage II

Changes

- May still be able to work – but at a reduced capacity.
- Still mostly independent at home, but organizing and prioritizing may be more challenging, and may not be as engaged in family activities.

Strategies

- If possible, negotiate with work place for modified duties, or apply for disability
- Help to maintain a schedule
- Seek treatment for cognitive and mood changes
- Future planning
  - Disability
  - Long-term care

Managing Apathy

- Routines, structure, “prompting”
- Evaluate for
- Depression
- Medical issues (thyroid dysfunction)
- Side effects of medications, including those for chorea, insomnia, allergies, depression
- Trial of atomoxetine failed to show benefit
- Sometimes stimulant drugs can be remarkably effective

Beglinger LJ et al. “RCT of atomoxetine for cognitive dysfunction in HD,” *J Clin Psychopharmacol* 2009:29:484-7.

Scenario 4

A 29 year old successful young professional developed psychosis as the initial manifestation of HD. His psychosis is well controlled with medications. By age 36 he can no longer work, but externalizes the reason. His wife divorces him, he no longer has a car, and he comes to clinic expressly to “get my car keys back.” He insists that he doesn’t have HD.

What do you think?

Unawareness and HD

- Not the same as psychological denial
- It's quite common, but not everyone with HD has this difficulty
- Can be limited to some symptoms, but not all
- Can lead to work, family conflict, injury
- Treatment is difficult; behavioral strategies are best

Hoth, Paulsen et al, "Patients with Huntington's disease have impaired awareness of cognitive, emotional, and functional abilities," *J Cin Exper Neuropsychol* 2007: 365-376.

A Few Final Words

- It's never too early to start behavioral strategies
  - Structure and routines help tremendously
  - Regular schedule of sleep/wake, meals, activities
  - Use calendars and reminders
  - The HD mantra: one thing at a time
- Good for the brain:
  - Healthy diet
  - Regular exercise
  - Avoid brain toxins…..alcohol, smoking
- Caregiving begins BEFORE Stage 1.
  - Ask for help.
  - "Share the Care!"

Thank you, patients and families!

Thank you for your courage and hope for the future … for your advocacy for better care and a cure … for teaching health professionals about HD … and for volunteering for research.