Huntington's Disease Society of America

HD 101—2012

Martha A. Nance MD
Hennepin County Medical Center HD COE
Struthers Parkinson's Center

The information provided by speakers in workshops, forums, sharing/networking sessions and any other educational presentation made as part of the 2011 HDSA convention program is for informational use only.

HDSA encourages all attendees to consult with their primary care provider, neurologist or other healthcare provider about any advice, exercise, medication, treatment, nutritional supplement or regimen that may have been mentioned as part of any presentation.

Presenter Disclosures

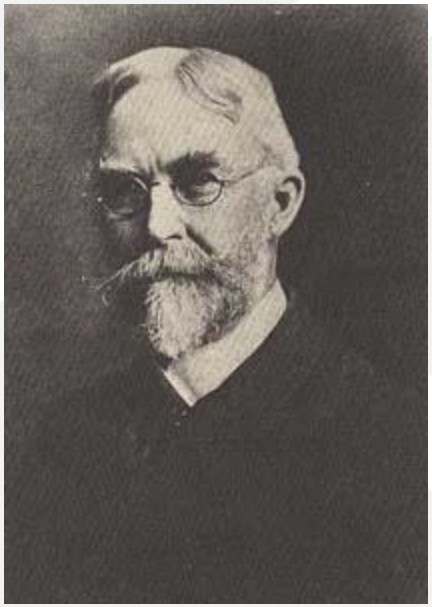
Martha Nance

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

Lundbeck Advisory Board

Thank you to…

George Huntington



Nancy Wexler

Ira Shoulson

Clinical features of HD

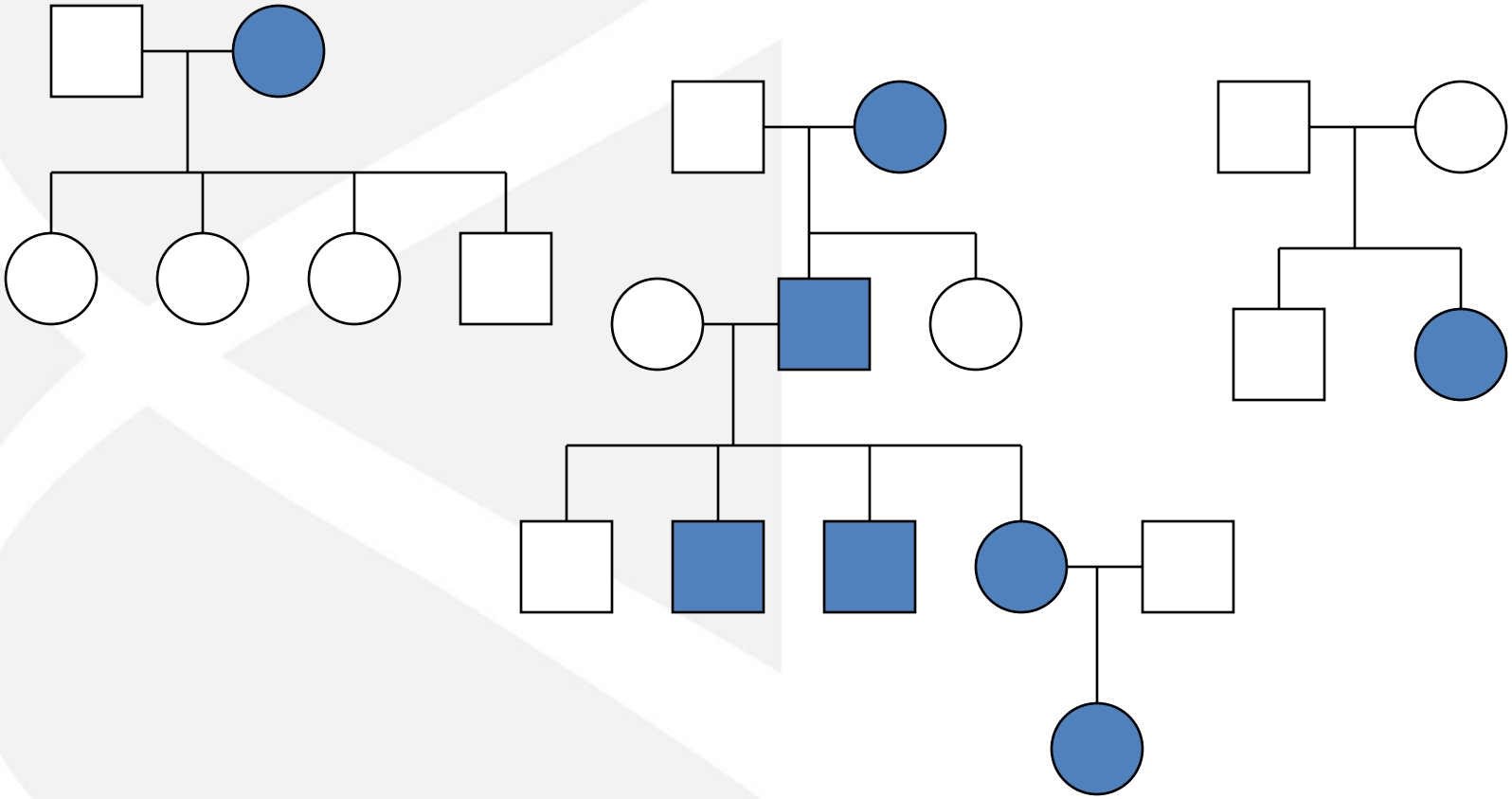
- Clinical aspects
  - Movement disorder
    - Involuntary movements
    - Voluntary movements
  - Cognitive disorder
  - Emotional disorder
    - Wide range of symptoms
  - (weight loss)

Clinical features of HD

- Onset age
  - Average onset 35-50 years (range 2-90)
  - Average duration 15-20 years

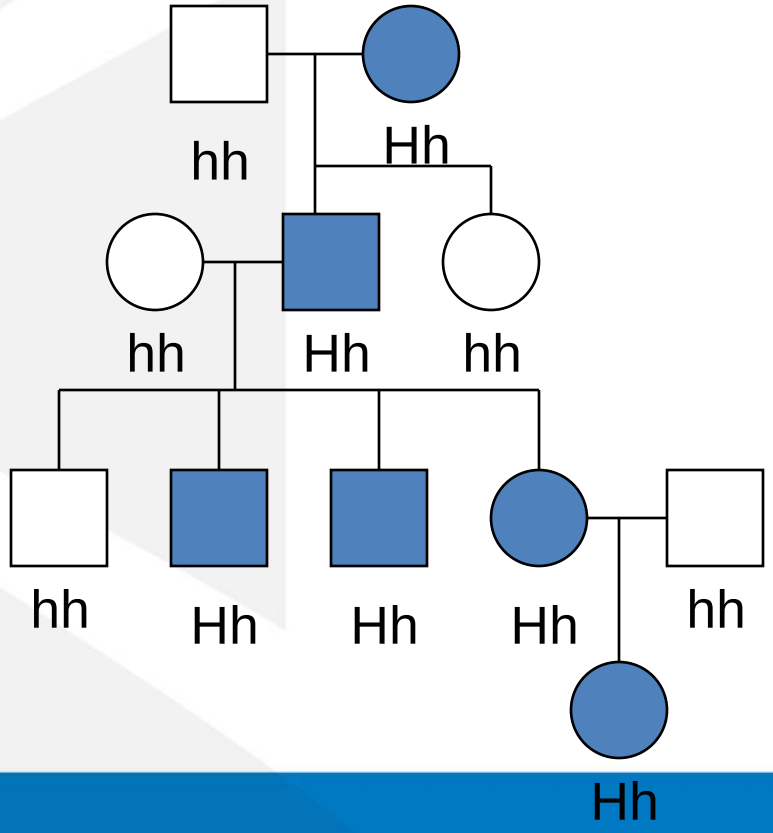
- Prevalence 4-7/100,000
- ?30,000 affected in US
- 150,000+ at-risk
- Seen in all ethnic groups
  - ?higher incidence in Caucasians

Family histories in HD



Dominant inheritance

Each child of a person with HD has a 50% chance of developing HD



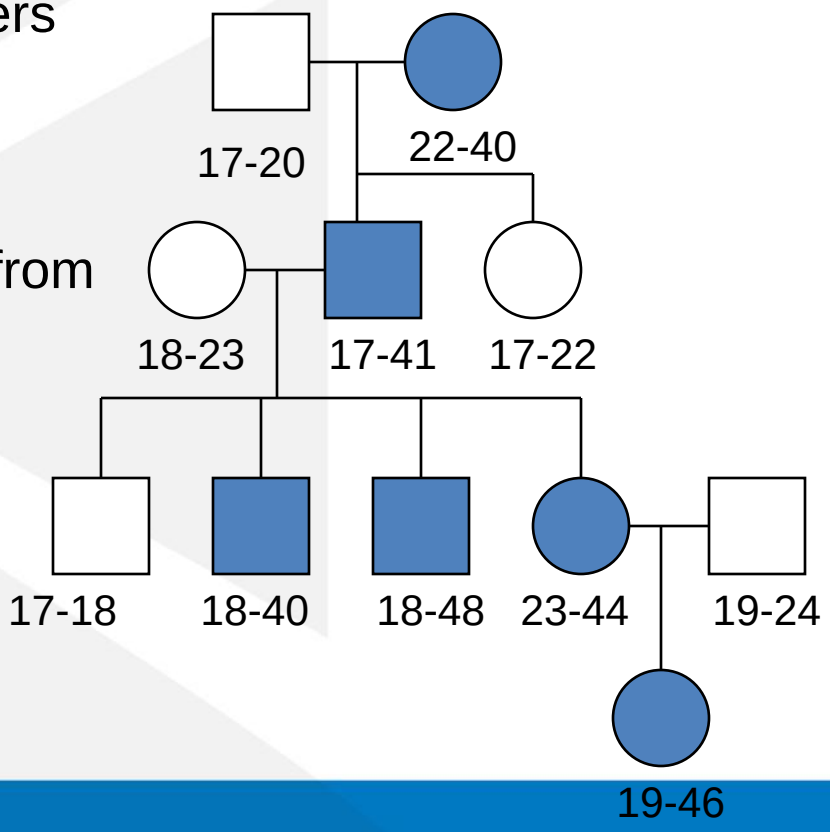
What causes HD

- Caused by a mutation in the Huntingtin gene
- Type of mutation: “CAG repeat expansion”
  - 10-35 CAG repeats is normal
  - 36- above is not normal and can cause HD
- A blood test can “diagnose” HD
- Everyone with HD has a CAG repeat expansion in the HD gene
- CAG repeat expansions between 36-39 may not lead to symptoms within a normal lifespan

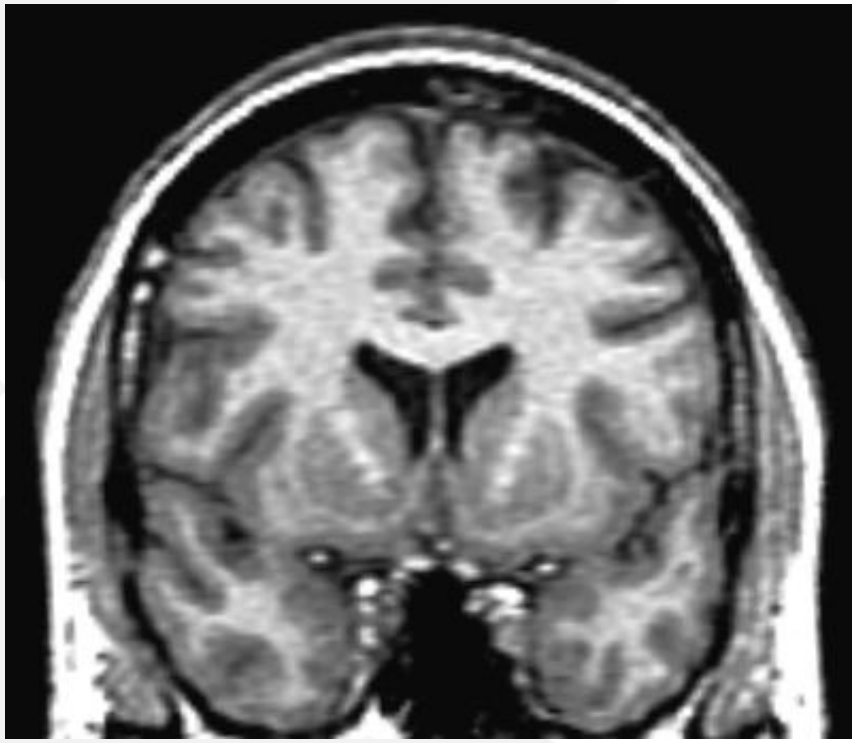
CTG GGG CAG CAG CAG CA

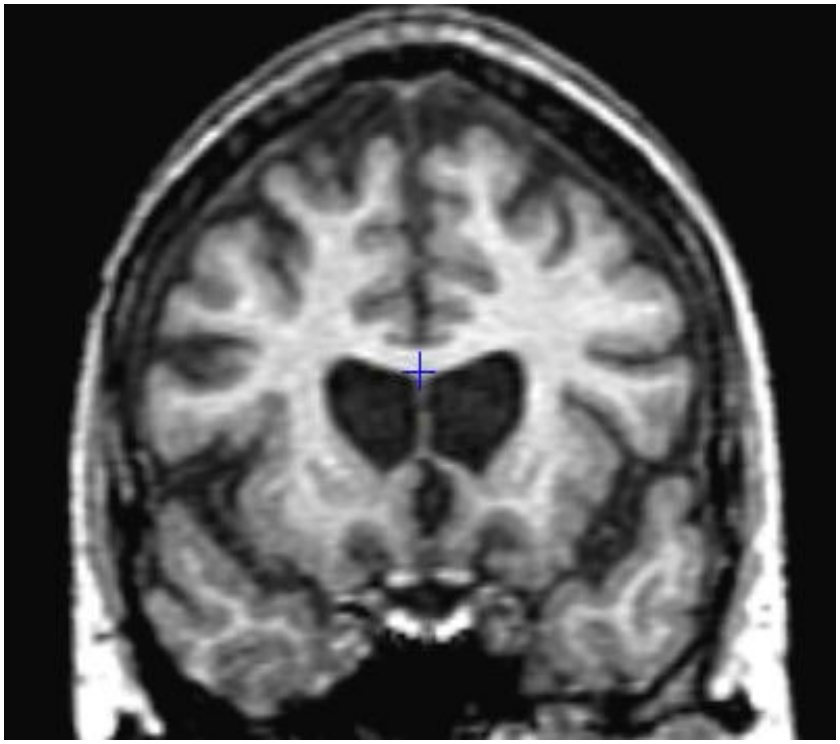
CAG repeats in a family

Normal repeat numbers don't change much; abnormal repeat numbers tend to get bigger when passed from parent to child



MRI Scans in HD

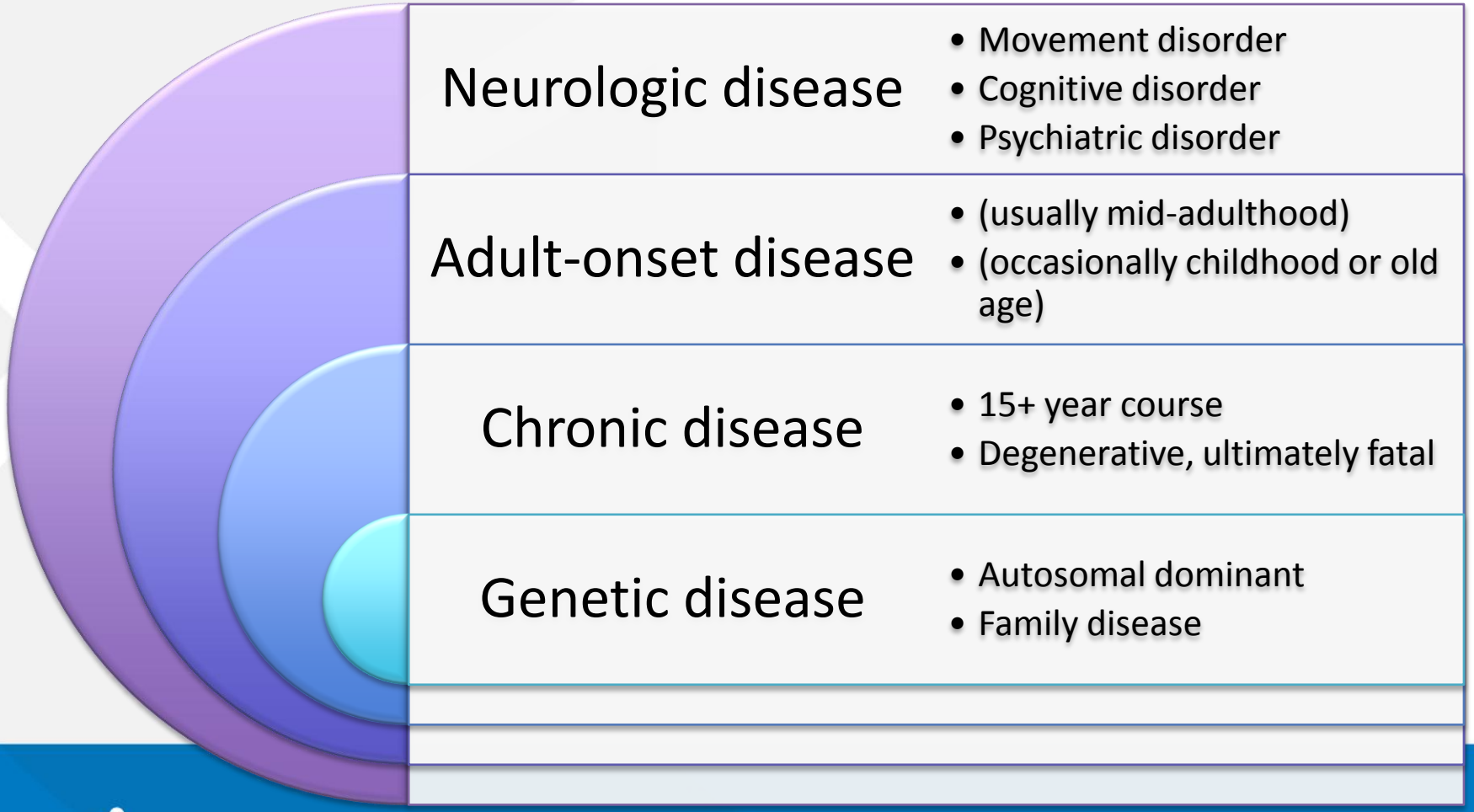




Normal Subject: Age 38

HD Subject: Age 31

Care-defining characteristics of HD



Shoulson-Fahn Total Functional Capacity Scale

Work	Money	Chores	ADLs	Residence
• 3-regular work • 2-difficulties • 1-volunteer • 0-none	• 3-manages independently • 2-manages with help • 1-makes simple purchase • 0-unable	• 2-full capacity • 1-impaired • 0-unable	• 3-independent • 2-needs some help • 1-assists caregiver • 0-does not participate	• 2-home • 1-home with services • 0-long term care

Stage 1 (11-13)—work, relationships, diagnosis
Stage 2 (7-10)—diagnosis, driving, work, enjoyment
Stage 3 (3-6)—transition time: personal help needed
Stage 4 (1-2)—in-home help vs. nursing home
Stage 5 (0)—dignity in late stages; terminal/Hospice

Medications for HD

- Chorea
  - Neuroleptics (haloperidol, thiothixene, chlorpromazine)
  - Atypical neuroleptics (risperidone, olanzapine)
  - Tetrabenazine (FDA-approved for HD)
- Depression, anxiety, paranoia, explosive behavior, irritability, hallucinations
  - Many drugs
- Cognitive dysfunction
  - (Alzheimer's drugs: donepezil, memantine, others)
- Weight loss
  - Eat!

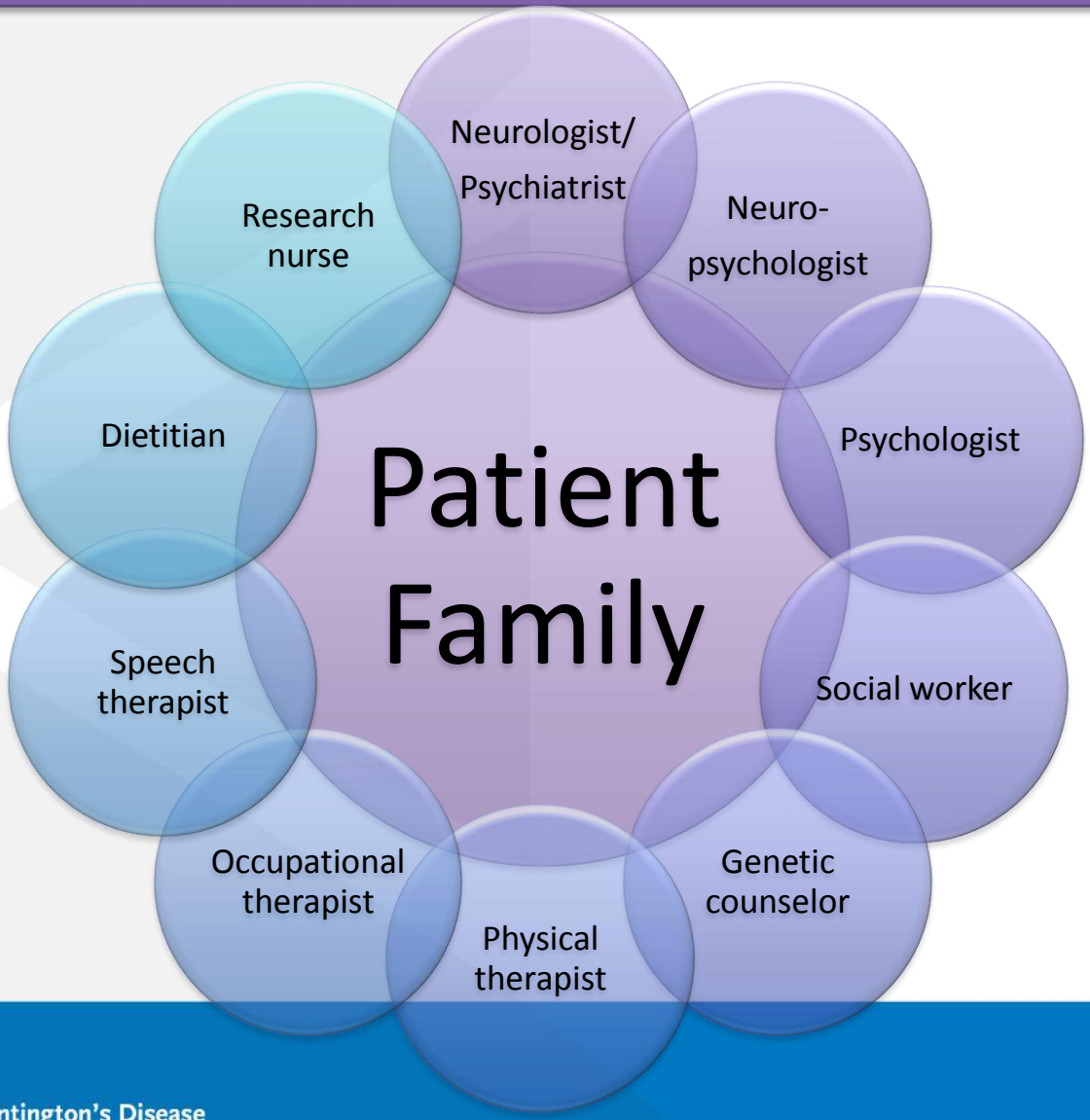
Vitamins (and other unproven treatments)

- Probably won't hurt, might help
  - Multivitamin, B, E (<400 IU), Coenzyme Q10 (>1000mg—expensive), omega fatty acids, creatine
- Probably won't hurt, probably won't help
  - Blueberries in human doses, most nutraceuticals, blue-green algae, acai berries,…
- I don't know what it is or why it would help
  - Mangosteen, vinpocetine, homeopathy, etc etc
- Sure, why not?
  - Yoga, massage, acupuncture (if appropriate symptoms), tai chi, "Eastern medicine" (done appropriately)
- And there's exercise, eat right, sleep right, avoid excess caffeine, nicotine, alcohol…

Principles of management: team-based care

- Neurologist or psychiatrist
- Psychology, neuropsychology
- PT, OT, speech
- Nurse-case manager
- Social worker
- Genetic counselor
- Dietitian
- Chaplain
- Medical doctor
- Dentist
- Research team
- Nursing home staff
- Lay group volunteers

HD care team



And: Students, Clinic staff, chaplain, Nurse coordinator, general practitioner, dentist

Management of HD

Health professional	Role in HD management
Neurologist	Team leader, movement disorder, initiate referrals
Psychiatrist	Psychiatric/behavioral symptoms
Psychologist	Behavioral symptoms; family counseling
Neuropsychologist	Cognitive assessment and recommendations
Speech therapy	Assess, treat dysphagia, communication problems
Physical therapy	Gait disorder, assistive equipment, exercise program
Occupational therapy	Safety, functional assessment, equipment
Dietitian	Healthy eating; altered food textures; high calorie foods
Social worker	Identify community resources; assist with legal, financial issues

Management of JHD

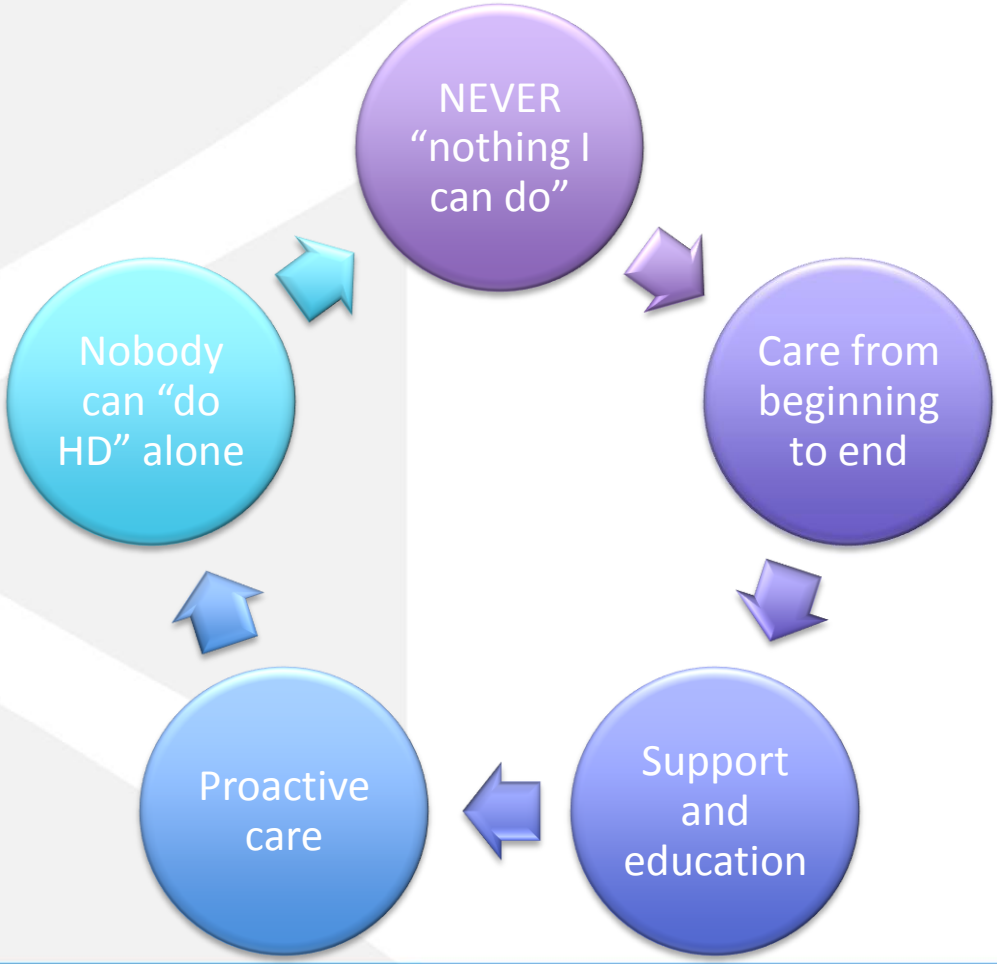
Type of professional	Role in HD management
General practitioner	General, age-appropriate care
Dentist	Age-appropriate care
Lay organization	Support for patient and family

Centers of Excellence

- Designated by HDSA
- 21 Centers throughout the country with special expertise in HD
- COEs have multidisciplinary care, support services, research

- Excellent care can also be found outside of COEs

Principles of care



You are not alone…

- Care
- Family support
- Genetic testing
- Advocacy
- Fundraising
- Research
- Community

Huntington's Disease Society of America

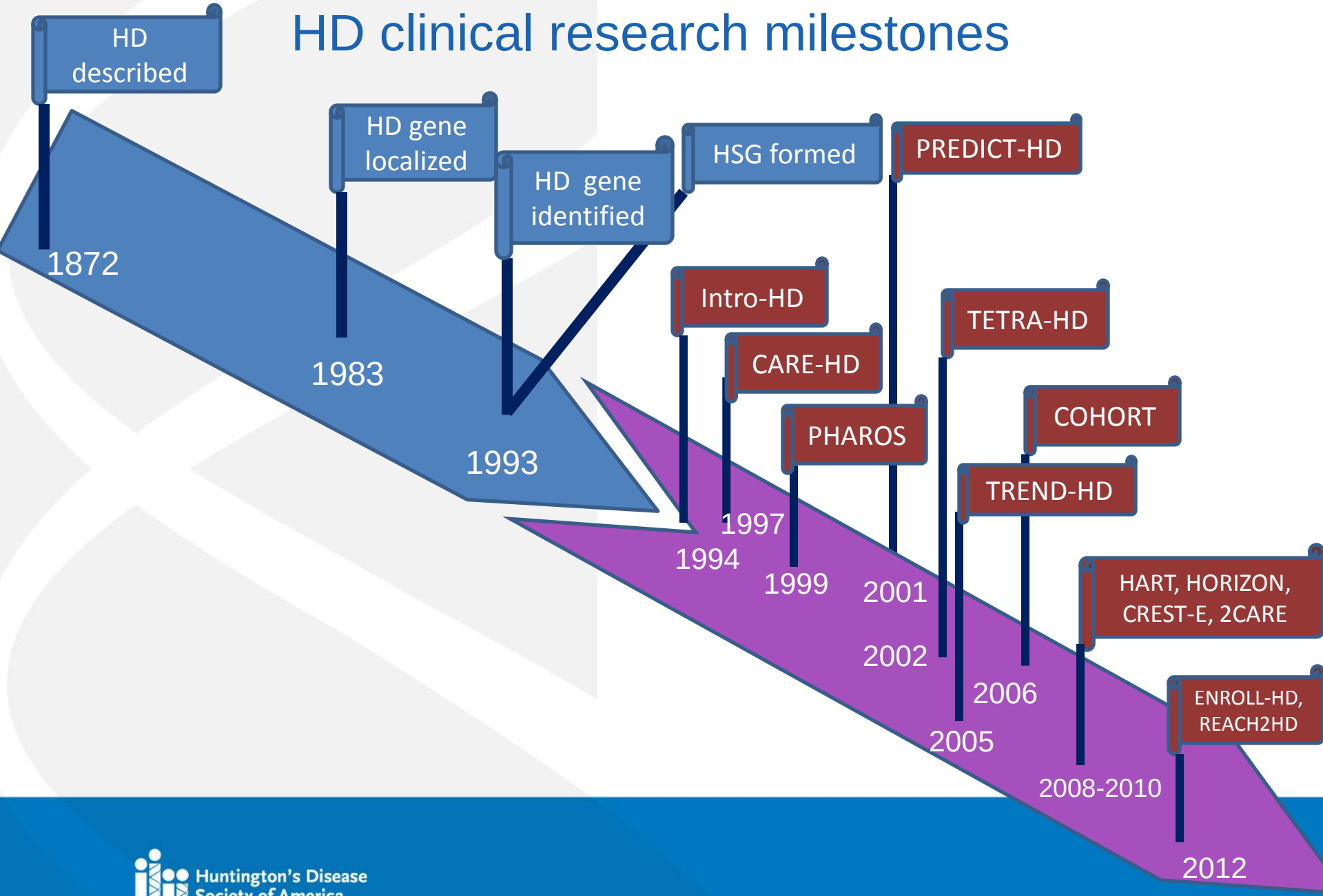
Developing a new drug

Lab/animal	**Early clinical, safety testing**	**Patient safety Efficacy testing**	**Efficacy, Safety**	**New drug application FDA review Approval**
No humans	**Small number healthy subjects**	**Multiple studies, small to moderate # of subjects with disease**	**Large # of subjects with disease**	
10-20 years	**3-5 years**	**3-5 years**	**2-5 years**	

Kinds of clinical research

Type	• Observational • Interventional
Size	• Small-scale • Large-scale
Duration	• Brief • Long-term
Sponsorship	• Government/nonprofit • Pharmaceutical/ for profit

HD clinical research milestones



Target Enrollment of Studies in Progress or Planning

2008	2009	2010	2011	2012

CREST-E (Creatine) 650 pts

2CARE (Co-Q) 680 pts

PREQUEL (Co-Q) 90 pts

PREDICT 2.0 (1,000 +)

CAB Beta Study (250)

REACH 2HD (100)

ENROLL (30,000+)

Thousands of trial participants are needed!

RESOURCES

- Huntington's Disease Society of America
  http://www.hdsa.org/research/clinical-trials.html
- Huntington Study Group (HSG)
  www.huntington-study-group.org
- HD Trials
  www.hdtrials.org
- National Institutes of Health (NIH)
- www.Clinicaltrials.gov
- Centerwatch Listing Service
  (617-856-5900) or www.CenterWatch.com

Other Good On-line Resources

- CHDI
- HD Youth Organization
- European HD Network
- Stanford Hopes
- Genetests.org