FTD Overview

Short for frontotemporal degeneration, FTD is the most common form of dementia for people under 60.

FTD represents a group of brain disorders caused by degeneration of the frontal and/or temporal lobes of the brain. It is also frequently referred to as frontotemporal dementia, frontotemporal lobar degeneration (FTLD), or Pick's disease.

The hallmark of FTD is a gradual, progressive decline in behavior and/or language; it can also cause a decline in motor function. As the disease progresses, it becomes increasingly difficult for people to plan or organize activities, behave appropriately in social or work settings, interact with others, and care for oneself, resulting in increasing dependency. The length of progression varies from 2 to over 20 years.

Over time, FTD predisposes an individual to physical complications such as pneumonia, infection, or injury from a fall. Average life expectancy is 7 to 13 years after the start of symptoms. The most common cause of death is pneumonia.

Getting an accurate diagnosis is often far more of a challenge than it should be for families. FTD is often misdiagnosed as Alzheimer's disease (AD) or some other type of neurological disorder or psychiatric problem, including depression. The diagnosis of FTD requires a thorough history, verified by a care partner or caregiver, and a neurological examination.

FTD Disorders

BEHAVIORAL VARIANT FTD

Behavioral variant FTD (bvFTD), the most common form of FTD, is responsible for about half of all cases of this disease. BvFTD is also frequently referred to as frontotemporal dementia or Pick's disease. The hallmarks of bvFTD are personality changes, apathy, and a progressive decline in socially appropriate behavior, judgment, self-control, and empathy. Unlike in Alzheimer's disease, memory is usually relatively spared in bvFTD. People with bvFTD typically do not recognize the changes in their own behavior, or exhibit awareness or concern for the effect their behavior has on the people around them.

CORTICOBASAL SYNDROME

Corticobasal syndrome (CBS) belongs to the category of FTD disorders that primarily affect movement. Some symptoms of both CBS and progressive supranuclear palsy, another FTD disorder associated with a decline in motor function, resemble those often seen in people with Parkinson's

disease. (These features are sometimes referred to as "atypical Parkinsonism.") Movement deficits in CBS often begin on one side of the body, but eventually both sides are affected. In addition to motor symptoms, people with CBS may exhibit changes in behavior and language skills common to bvFTD and PPA, particularly as the disease progresses.

Like all FTD disorders, CBS is associated with degeneration of the brain's frontal and temporal lobes. In addition, several regions deeper in the brain that play important roles in initiating, controlling and coordinating movement are also affected. The term corticobasal degeneration (CBD) is applied to cases which have a particular type of tauopathy at autopsy. Some cases of CBS prove to have Alzheimer's pathology instead.

PRIMARY PROGRESSIVE APHASIA

FTD syndromes characterized predominantly by the gradual loss of the ability to speak, read, write or understand what others are saying fall under the category of primary progressive aphasia, or PPA. Experts further subdivide PPA into three clinical subtypes based on the specific language skills that are most affected.

People with the **nonfluent/agrammatic variant of PPA (nfvPPA)**, also called progressive nonfluent aphasia or PNFA, find it increasingly difficult to speak yet can still recall the meanings of individual words. Their ability to form sounds with their lips and tongue is caused by degeneration of the parts of the brain that control certain related muscles; the muscles themselves, however, are unaffected. As a result, their speech becomes slow and effortful and they may appear to be physically struggling to produce words.

In addition, people with nfvPPA make many mistakes while speaking, including omitting words, using word endings and verb tenses incorrectly, and/or mixing up the order of words in sentences. Eventually, they may develop difficulty swallowing as well as more widespread motor symptoms similar to those seen in the movement-predominant forms of FTD such as corticobasal syndrome.

The hallmark of **semantic variant PPA (svPPA)** is the progressive loss of the meanings of words and objects. This PPA variant is also called semantic dementia. Other language skills, including the ability to produce speech and to repeat phrases and sentences spoken by others, are unaffected. However, although the affected person may continue to speak fluently, their speech becomes vague and difficult to understand because many words are omitted or substituted. As the disorder progresses, people with svPPA may also exhibit changes in behavior similar to those seen in bvFTD, such as disinhibition and rigid food preferences.

People with **logopenic variant PPA (lvPPA)** have difficulty remembering words when they are speaking. As a result, they speak slowly and hesitate frequently as they search for the right word. Unlike people with semantic variant PPA, however, they are still able to recall the meanings of words. The lvPPA form of PPA is also characterized by short-term memory problems that compromise the ability to

repeat phrases and sentences. As the disease progresses, affected individuals may develop problems comprehending complex sentences or difficulty swallowing.

PROGRESSIVE SUPRANUCLEAR PALSY

Progressive supranuclear palsy (PSP) belongs to the category of FTD disorders that primarily affect movement. Some symptoms of both PSP and corticobasal syndrome, another FTD disorder associated with a decline in motor function, resemble those often seen in people with Parkinson's disease. In fact, these features are sometimes referred to as "atypical Parkinsonism."

The earliest motor symptoms are stiffness in the axial muscles, the neck and trunk along with poor balance and more frequent falls. The earliest visual signs are decrease in upward vertical movement of the eyes (vertical saccades) and is a progressive inability to move the eyes, including opening or closing the eyes. PSP can also affect coordination, and movement of the mouth, tongue, and throat. In addition to motor symptoms, people with PSP may exhibit changes in behavior and language skills common to bvFTD and PPA, particularly as the disease progresses.

ALS AND FRONTOTEMPORAL DEGENERATION

It is now recognized that the *C9orf72* gene is the most common gene causing hereditary FTD, ALS and ALS with FTD. We now know that several other genes can also cause both diseases. Describing the clinical syndrome where both FTD and ALS occur in the same person has been an area of active research and our knowledge of the underlying genetics, pathology and clinical features is still unfolding.

BvFTD symptoms are often noticed first, with motor symptoms identified later. In addition to changes in behavior, personality and language skills that characterize bvFTD, people with FTD-ALS also have difficulty walking, standing, using their hands, speaking, swallowing, or breathing. The spinal cord and nerves outside the central nervous system (brain and spinal cord) that communicate with muscles are affected, as well as the frontal and temporal lobes. Motor symptoms may include muscle weakness, atrophy, twitching, slurred speech, and difficulty swallowing.

Because the term "ALS" is often used interchangeably with the term "motor neuron disease"—a more general designation for any disorder associated with progressive loss or dysfunction of motor neurons—this form of movement-predominant FTD is sometimes and in some countries referred to predominantly as "FTD with motor neuron disease (MND)."

The current understanding of ALS with language deficits is still incomplete. Both the non-fluent agrammatic and semantic variants of primary progressive aphasia have been reported in association with ALS.

Genetics of FTD

People with FTD and their families often worry if FTD is hereditary, particularly if one or more additional family members have received a diagnosis of FTD or another neurodegenerative disorder, such as ALS or Alzheimer's disease.

Is FTD inherited? In at least half of affected individuals, the answer is "no" – their FTD is said to be sporadic, meaning that none of their relatives are known to have FTD. However, approximately 40% of affected individuals with FTD do have a family history that includes at least one other relative diagnosed with a neurodegenerative disease. Their FTD is described as familial.

Familial FTD is caused by harmful gene mutations that affect proteins essential to the normal functioning and survival of brain cells. Researchers have identified three genes that account for the majority of mutation-associated hereditary FTD cases: *C9orf72*, Progranulin (GRN), and Microtubule-associated protein tau (MAPT). (Mutations in other genes have also been described but are much rarer than the three mentioned above.)

If your family history raises some questions or concerns in this area, there are some important steps you can take to explore further.

- **GET INFORMED.** The resources listed below provide more information about basic genetic terms and concepts as well as details of the genetics of FTD. Talk to the neurologist about your concerns.
- **TALK TO OTHER MEMBERS OF YOUR FAMILY.** Not all relatives will want to pursue this information, so you may need to be sensitive to their wishes. But an important step is to gather as much family history as possible. Ask questions about the early symptoms of any family member affected with FTD or a related disease. Find out the age of onset of symptoms.
- **ASK YOUR NEUROLOGIST FOR A REFERRAL TO A GENETIC COUNSELOR** or other healthcare professional experienced in the genetics of adult neurological conditions.
- **STAY CALM.** You've already taken an important first step by gathering information and exploring your options. Remember that AFTD is here to help and answer your questions.

Managing FTD

There are currently no approved treatments or cures for FTD, and while no lifestyle change will stop the progression or reverse the disease, steps can be taken to manage symptoms to the best of your ability. For example, research shows that proper nutrition, regular exercise and stress management can help to protect brain functioning, among other benefits (including reducing the risk of heart disease).

FOLLOWING A DAILY ROUTINE: Many people with FTD, as well as their care partners, benefit from following a regular daily routine. Predictable patterns and activities—meals, household tasks, physical activity, hobbies, social interaction, spiritual development, a regular sleep schedule – provide an important framework for both the person with FTD and the caregiver.

While routines are important, FTD is unpredictable, so it is important for care partners and persons diagnosed to remain flexible. While you may not be able to do things as quickly or easily as before, activities can be adapted and still provide enjoyment. As symptoms progress, it may become necessary to discontinue some activities.

ENGAGING IN ACTIVITIES: It is also important for people with FTD to stay engaged in enjoyable and stimulating activities of their choosing. If competitive poker or bridge was a favorite social activity, playing a more casual or simpler version with fewer rules if needed can engage the person, connect with that part of their past and provide a meaningful way to interact with others. These activities should bring enjoyment to the person with FTD. If one becomes too difficult or stressful as abilities change, it is time to reevaluate and adjust. An activity can be as simple as listening to music or watching the birds outside, as long as it brings enjoyment. FTD impairs an individual's ability to think clearly and act rationally. A person with FTD may act compulsively, aggressively or otherwise out of character. These are symptoms of the disease. People diagnosed cannot control these types of behaviors, and they often struggle to correct them, even when a loved one points them out.

MANAGING SYMPTOMS: Since people with FTD often cannot be expected to change their behavior, caregivers must adjust their own expectations when it comes to managing these symptoms. Confronting a person diagnosed and trying to correct their actions after the fact is usually less successful than trying to prevent these behaviors before they happen, and reducing the risks involved if they do happen.

AFTD Is Here to Help

If you are affected by this disease, contact our HelpLine at **866.507.7222**, or by email at **info@theaftd.org**. Visit our website for more information, as well as ways to connect with support groups and other vital resources.