



Central Nervous System

The nervous system has two components: the Central Nervous System (CNS) and the Peripheral Nervous System (PNS). The CNS consists of the brain, spinal cord, and optic nerves; all the other nerves in the body make up the PNS. Nerves allow a person to sense and feel in response to the stimuli of the external environment. They also control movement; when you want to walk your brain sends a signal to your legs and feet to start walking. The brain is at the center of this system, receiving and sending the signals that together make up the experience of living.

Alzheimer's Disease (AD)

Alzheimer's disease is a neurodegenerative disease characterized by progressive cognitive deterioration. This leads to the declining ability to complete the activities of daily life and is accompanied by neuropsychiatric symptoms and behavioral changes. It is the most common cause of dementia. In its early stages, patients experience short-term memory and may forget minor details. As the illness progresses, older memories are forgotten, language skills diminish, movement is decreased, and recognition and decision making abilities deteriorate. These unfortunate effects result from the atrophy of neurons in the temporoparietal and frontal cortexes of the brain, together with inflammation due to plaques and neurofibrillary tangles.

The cause of the disease is unknown, though certain genetic predispositions have been discovered for a few early-onset cases. Advanced age is the primary risk factor for the disease and according to the Rush Institute for Healthy Aging, 25 percent-50 percent of people aged 85 and older exhibit signs of Alzheimer's. People can reduce their risk of developing the disease by engaging in intellectual stimulation, physical exercise, regular social interaction, eating healthfully, lowering cholesterol, and taking anti-inflammatory medications. Currently there are no known cures.

	COMPANY	PRODUCT	PHASE
Alzheimer's Disease	Berlex	BX471	II
	Corcept Therapeutics, Inc.	Corlux (mifepristone)	II
	Medivation, Inc.	Dimebon	II
	Saegis Pharmaceuticals, Inc.	SGS742	II
	DURECT Corporation	Durin leuprolide implant / Memryte	III
	Neurobiological Technologies, Inc.	Memantine	M

Amyotrophic Lateral Sclerosis (ALS)

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, is a progressive neurodegenerative disease in which the nerves slowly deteriorate until they die completely. The nerves affected by ALS are known as motor neurons, which transfer signals from the brain to the muscles of the body, directing movement. The first symptoms are a general weakness in the arms, legs, and in the speaking and breathing muscles. Eventually, without use, these muscles will become weaker and atrophy (wither and become smaller). It is estimated that 30,000 Americans suffer from ALS. While there is no known cure, there are treatments that slow its progression and alleviate symptoms.

	COMPANY	PRODUCT	PHASE
Amyotrophic Lateral Sclerosis	Avicena Group, Inc.	ALS-08	II
	Avicena Group, Inc.	ALS-02	III

Anxiety

Anxiety is a combination of emotions including fear, apprehension and worry. Researchers believe that anxiety is the body's way of preparing for, avoiding, and dealing with external threats. There may be cognitive, somatic, emotional and behavioral components, including expectation of danger, high blood pressure, increased heart rate, sweating, inhibited digestive and immune function, trembling, a sense of fear or panic, nausea, and chills. It is thought that the amygdala and hippocampus are the areas of the brain which control anxiety. Treatments exist for the various manifestations and can range from meditation to medication.

COMPANY	PRODUCT	PHASE	
Pherin Pharmaceuticals, Inc.	PH94B	II	Anxiety

Attention Deficit Hyperactivity Disorder (ADHD)

It is estimated that one child in a class of 25-30 children suffers from Attention Deficit Hyperactivity Disorder. The disorder usually becomes apparent during the first few years of school and is characterized by two major symptoms: attention deficit (problems paying attention) and hyperactivity (difficulty in controlling behavior). Most children are overactive at some point and occasionally do not pay attention, but ADHD behavioral problems are fairly distinctive: attention and hyperactivity issues occur more often than in most children, tasks do not get completed, and it appears as though the child cannot control their behavior, not that they simply won't. Psychologists, psychiatrists, and pediatricians are all resources who can help diagnose ADHD. Treatments include medication and behavioral therapy.

COMPANY	PRODUCT	PHASE	
Saegis Pharmaceuticals, Inc.	SGS742	II	Attention Deficit Disorder with Hyperactivity
Impax Laboratories, Inc.	Amphetamine	PA	
ALZA Corporation	Concerta (methylphenidate)	PA	
ALZA Corporation	Concerta (methylphenidate)	M	

Brain Injuries

Unfortunately, there may be a time in our life when we suffer an accident that causes trauma to our brain. Because the brain is the most important organ in our body, it is crucial that everything is done to ensure its continued proper function. Treatments aid the healing of brain tissue without permanent damage.

COMPANY	PRODUCT	PHASE	
Xytis, Inc.	Anatibant (LF16-0687MS)	II	Brain Injuries

Dementia

Dementia is a generic term for the progressive decline in cognitive function due to damage or disease of the brain. Memory, attention, language and problem-solving abilities are particularly affected, though in the later stages of the disease affected persons may become disoriented in time, place, and person. Symptoms are usually irreversible though less than 10 percent are reversible. Though there is no specific cure, treatments focus on slowing the progression of the disease.

	COMPANY	PRODUCT	PHASE
Dementia	Neurobiological Technologies, Inc.	Memantine	III

Depression

Depression, also known as clinical or severe depression, is a state of intense sadness and melancholy that has become disruptive to an individual's ability to function socially and complete the daily activities of life. Most people feel depressed and "down" at some point in their life; it is when these feelings are prolonged that clinical depression is suspected. According to the World Health Organization, clinical depression is currently the leading cause of disability in the U.S. and is expected to become the leading cause of disability worldwide by the year 2020. The average age of onset is the late 20s, with about twice as many females receiving treatment than men. This disparity shrinks dramatically after menopause. Treatment generally includes a combination of medications and psychotherapy.

	COMPANY	PRODUCT	PHASE
Depression	Corcept Therapeutics, Inc.	Corlux (mifepristone)	III
	Impax Laboratories, Inc.	Bupropion hydrochloride Controlled Release Tablets	M

Fibromyalgia Syndrome

Fibromyalgia is a chronic syndrome characterized by specific muscle, joint, or bone pain, fatigue and a large range of other symptoms. There is usually a heightened sensitivity to the skin, tingling of the skin, achiness in the muscles, limb weakness, and nerve pain. The National Fibromyalgia Association believes that there may be a genetic predisposition to the disease. This condition is seen in 3 percent to 6 percent of the general population, and is often diagnosed between the ages of 20 and 50 years old. Physicians do not understand this disease well and there are few, if any, effective treatments available.

	COMPANY	PRODUCT	PHASE
Fibromyalgia Syndrome	Jazz Pharmaceuticals	Xyrem (sodium oxybate)	III

Huntington's Disease (HD)

Huntington's disease is a rare neurological disorder that affects 5 to 8 people per 100,000. This is one of the first inherited genetic disorders for which an accurate test exists. Huntington's is caused by a trinucleotide repeat in the Huntington gene, which in turn produces a mutant protein that causes cell death in the brain. As more of the brain dies, function and movement abilities in the patient decrease. One of the most obvious symptoms of Huntington's is abnormal body movements (chorea) and decreased mental ability. The average age of onset is between 40 and 50 years old; children under the age of 20 have a form called Juvenile HD. As with most other genetic disorders, there is no cure, but symptoms can be managed with medication and appropriate care.

COMPANY	PRODUCT	PHASE	
Avicena Group, Inc.	HD-02	II	Huntington's Disease

Insomnia

Insomnia is defined as the inability to sleep and/or to be incapable of remaining asleep for any lengthy amount of time. Doctors recommend 8 to 10 hours of sleep a night; the average American only gets 7. A common complaint amongst insomniacs is the inability to “turn off their mind” for more than just a few minutes at a time. Insomnia can be caused by a variety of factors, many of which are linked to fear, stress, anxiety, medications, herbs, caffeine, physical pain, or overactive mind. The condition tends to increase with age. Each person is treated on an individual basis, as the cause of insomnia varies from person to person. The Department of Health and Human Services estimates that 60 million Americans suffer from insomnia. Approximately 40 percent of sufferers are women.

COMPANY	PRODUCT	PHASE	
TransOral Pharmaceuticals, Inc.	Intermezzo (zolpidem tartrate)	II	Insomnia
Questcor Pharmaceuticals, Inc.	Doral (quazepam)	M	

Memory

Memory is the ability to store, retain, and recall information from our brains. The study of memory has become one of the pillars of a new branch of science that marries cognitive psychology and neuroscience. Over time, it may become more difficult for us to remember little things here and there; memory loss is generally associated with old age and is a common symptom of several diseases such as Alzheimer's and hypothyroidism.

COMPANY	PRODUCT	PHASE	
Saegis Pharmaceuticals, Inc.	SGS742	II	Memory Impairment
Saegis Pharmaceuticals, Inc.	SGS518	II	
Saegis Pharmaceuticals, Inc.	SGS111	II	

Migraine

Migraine headaches are one of the most common and most debilitating neurological conditions. They are characterized by severe pain on one or both sides of the head and are usually accompanied by sensitivity to light, sound and nausea. Evidence suggests that migraine pain is a symptom of disorders of the serotonergic control system, a dual hormone neurotransmitter with many types of receptors. It is estimated that migraine headaches are widespread throughout the population, with 10 percent of the population diagnosed and 5 percent undiagnosed. Treatments range from applying hot or cold compresses to the head to migraine rescue drugs (but these vary significantly by patient in effectiveness). Patients generally need to work with their physicians to determine a combination of therapies that works for them.

	COMPANY	PRODUCT	PHASE
Migraine	Alexza Pharmaceuticals, Inc.	AZ-001 (Staccato prochlorperazine)	II
	MAP Pharmaceuticals, Inc.	MAP0004	II
	Nektar Therapeutics	Marinol (dronabinol)	II

Multiple Sclerosis (MS)

Multiple Sclerosis is a chronic disorder in which damage occurs to the protective tissue, known as myelin, surrounding the nerve fibers of the central nervous system. MS is thought to be an autoimmune disease in which a person's immune system malfunctions and starts attacking the body's own tissues. In this case, the myelin sheaths are affected. Myelin protects the nerves and is necessary for their proper function. As the disease progresses and myelin is destroyed, the nerve impulses are interrupted and the symptoms of MS occur. Symptoms vary from person to person depending on which nerves are affected. They can range from fatigue, mental and emotional effects, vision problems, and bladder and bowel dysfunction to difficulty controlling limbs.

MS affects 400,000 Americans, but their experience may each be different because the disease can vary significantly in its presentation. There are four clinical courses of the disease, which range from occasional flare ups to the constant worsening of symptoms, and combinations of the two. Researchers have not found a cause for the disease, but they suspect genetics and environmental factors play a role.

	COMPANY	PRODUCT	PHASE
Multiple Sclerosis	Peppen Corporation	Tauferon	II
	Bayhill Therapeutics, Inc.	BHT-3009	II
	PDL BioPharma, Inc.	Zenapax (daclizumab)	II
	Novartis AG	Betaferon/Betaseron	III
	Genentech, Inc.	Rituxan (rituximab)	III
	Berlex	Betaferon/Betaseron (interferon beta-1b)	PA
	Novartis AG	Betaferon/Betaseron (350mcg)	M
	Novartis AG	Betaferon/Betaseron (interferon beta-1b)	M
	Questcor Pharmaceuticals, Inc.	HP Acthar Gel (Repository Corticotropin Injection)	M

Myasthenia Gravis

Myasthenia gravis is a neuromuscular disease that leads to fluctuating weakness and fatigue. The weakness is caused by antibodies that block the receptors for a certain protein at the neuromuscular junction, preventing the stimulative effect necessary for proper muscle function. Immunosuppression and inhibitor therapies are used to treat patients with this disease. It is a lesser known autoimmune disorder and is estimated to affect about 14 people per 100,000 in the United States.

COMPANY	PRODUCT	PHASE	
Impax Laboratories, Inc.	Pyridostigmine Bromide Tablets	M	Myasthenia Gravis

Narcolepsy

Narcolepsy is a neurological condition characterized by excessive daytime sleep and the disorder of rapid eye movement (REM). It is easily distinguishable, as patients feel overwhelmingly sleepy during the day, even after a full night's rest and often tend to fall asleep without warning at inappropriate times and places. These naps occur several times a day. The four classic symptoms of narcolepsy, which may not occur in all patients, include sudden loss of muscle function and body collapse, sleep paralysis, hallucinations, and automatic behavior during sleep. Only 20 percent-25 percent of narcoleptics will experience all four symptoms. Due to the nature of the symptoms, many patients with narcolepsy experience problems in their social, personal, and professional lives. The cause of narcolepsy is unknown, but treatments exist for the symptoms and medications, including antidepressants, are commonly prescribed.

COMPANY	PRODUCT	PHASE	
Jazz Pharmaceuticals	Xyrem (sodium oxybate)	M	Narcolepsy

Neuralgia

Neuralgia is a painful disorder of the cranial nerves that causes short periods of excruciating pain, usually for less than two minutes, on one side of the face. The pain is described by patients as "stabbing," "sharp," and "like lightning." There is an atypical form in which pain can last for extended periods of time. The onset of pain may be triggered by simple stimuli such as eating, talking, washing to face, or any other light touch. Because it is a form of chronic pain, and patients show no physical abnormalities, neuralgia can be extremely difficult to diagnose. The condition is rare in those under 30, with women over 50 at greatest risk. Treatments such as seizure medication have only proven partially effective.

COMPANY	PRODUCT	PHASE	
Xenoport, Inc.	XP13512	II	Neuralgia
DepoMed, Inc.	Gabapentin ER / Gabapentin GR	III	

Pain

Pain can arise for a variety of reasons, but generally occurs after some form of injury to the body. Effective pain management is an important part of the healing process. When a patient is in pain, it can be difficult for doctors to perform the necessary tests and therapies, leading to more pain in the long run. Keeping pain under control can lead to faster recovery times and enhanced quality of life for patients.

	COMPANY	PRODUCT	PHASE
Muscle Pain	Anesiva, Inc.	ALGRX 4975	II
Pain	Anesiva, Inc.	ALGRX 4975	II
	AP Pharma, Inc.	APF112	II
	DURECT Corporation	Chronogesic (sufentanil)	II
	Neurobiological Technologies, Inc.	Memantine	II
	Genentech, Inc.	RN624	II
	Rinat Neuroscience, Inc.	RN624 / RI 624	II
	DURECT Corporation	Transdermal Sufentanil Patch	II
	Anesiva, Inc.	ALGRX 3268 / PowderJect Dermal Lidocaine	III
	Pharmagenesis, Inc.	OROS hydromorphone / AP-77	III
	Pain Therapeutics, Inc.	OxyTrex (oxycodone and naltrexone)	III
	Pain Therapeutics, Inc.	Remoxy (oxycodone)	III
	DURECT Corporation	Remoxy (oxycodone)	III
	Muscle Pain	NutraCea	CeaFlex cream
Pain	Novartis AG	Diamorphine	M
	Shaklee Corporation	Joint and muscle pain cream	M
	Impax Laboratories, Inc.	Oxycodone Hydrochloride Controlled Release Tablets	M
	TheraLife, Inc.	TheraLife back and leg	M
	TheraLife, Inc.	TheraLife enhancer	M
	TheraLife, Inc.	TheraLife neck	M
	TheraLife, Inc.	TheraLife wrist	M

Panic Disorder

A panic attack is an episode of intense fear or psychological distress that suddenly appears. Symptoms include trembling, shortness of breath, heart palpitations, sweating, nausea, dizziness, hyperventilation and sensations of choking. Repeated attacks may be a sign of a panic disorder and are usually associated with other anxiety problems. In some cases, panic attacks are triggered by phobias. It is estimated that up to 10 percent of people in the United States will experience a panic disorder at some point in their lives. Women are more likely to be affected than men and the attacks usually begin to occur before the age of 24. Treatments generally include cognitive-behavioral therapy and a combination of antidepressants and anti-anxiety medications. Family and friends can provide a great source of strength during the difficult recovery period.

COMPANY	PRODUCT	PHASE	
Alexza Pharmaceuticals, Inc.	AZ-002 (Staccato alprazolam)	II	Panic Disorder

Parkinson's Disease

Nerve cells communicate with one another using chemicals called neurotransmitters. Parkinson disease is a neurological disorder that destroys certain cells in the brain, resulting in a shortage of the neurotransmitter dopamine. The affected nerves in patients are located in the area of the brain that controls movement. The first signs of Parkinson disease can be quite subtle, from softer, slower speech to an arm that does not swing when you walk. The most common, most noticeable symptom is tremors beginning on one side of the body, usually in one hand. As the disease progresses, the tremors may become worse, moving up the arm and into the head, lips, or feet. Later, bradykinesia (slowed motion) can cause problems throughout the body, from a shuffling walk, to difficulty performing routine tasks. Muscles can become stiff, speech can become soft and slow, and in later stages even swallowing may become difficult. In some rare and severe cases, reason and memory may start to decline as a result of a mental condition called dementia.

Parkinson disease is progressive, meaning that the symptoms get worse over a period of time. In many of the 1.5 million sufferers in the United States, the disease may progress for years. Treatments that replace the missing neurotransmitter have proven to be quite effective and other treatments are currently under development.

COMPANY	PRODUCT	PHASE	
Avigen Inc /DE	AV201	II	Parkinson's Disease
Antipodean Pharmaceuticals, Inc.	MitoQ (mitoquinone)	II	
Avicena Group, Inc.	PD-02	II	
Avicena Group, Inc.	PD-04	II	
Titan Pharmaceuticals, Inc.	Spheramine	II	
Impax Laboratories, Inc.	Vadova (carbidopa and levodopa)	PA	
Impax Laboratories, Inc.	Carbidopa and Levodopa Extended Release Tablets	M	

Restless Leg Syndrome (RLS)

Restless legs syndrome is a poorly understood and frequently misdiagnosed neurological disorder in which a person feels uncontrollable urges to move his or her limbs in order to stop uncomfortable or painful sensations in the body, usually in the legs. Movement of the affected part eliminates the sensation, providing temporary relief. RLS can start at any age and affects each person differently. Sometimes, the sensations cease entirely; other times they become chronic. Recent clinical studies estimate that 2.7 percent of the general population experiences restless legs syndrome.

COMPANY	PRODUCT	PHASE	
Xenoport Inc.	XP13512	III	Restless Leg Syndrome

Schizophrenia

Schizophrenia is a psychiatric diagnosis that signifies a mental disorder. Characteristics of schizophrenia include impairments in the perception and expression of reality and major social and occupational dysfunction. A person experiencing untreated schizophrenia will generally have disorganized thoughts, delusions, and/or auditory hallucinations. The disease primarily affects cognition, though chronic behavioral and emotional problems usually ensue. Currently there is a debate as to whether or not schizophrenia is one disease or a combination of many.

There is no specific cause for the disorder, but genetics, neurobiology, and social environment seem to be contributing factors. Diagnosed patients typically live 10-12 years less than their healthy counterparts due to higher rates of other physical health problems and a high suicide rate. The National Mental Health Association estimates that 1 out of every 100 Americans has the disease. Treatments include a combination of medication and hospitalization, with the more severe cases often being referred to community treatment programs.

	COMPANY	PRODUCT	PHASE
Schizophrenia	Alexza Pharmaceuticals, Inc.	AZ-004 (Staccato loxapine)	II
	Athenagen, Inc.	GTS-21	II
	Titan Pharmaceuticals, Inc.	Zomaril / ILO522 (iloperidone)	III

Stress

Stress is defined as a physical or psychological stimulus that can produce mental tension or physiological reactions that may lead to illness. Responsibilities related to work, family, well-being, and finances may become overwhelming or difficult to balance. This can lead to prolonged frustration and stress. Stress management techniques include allowing enough personal time for oneself, as well as exercise, meditation, yoga, sleep and other activities in which one finds enjoyment. Unfortunately, sometimes successful stress management is elusive. Drugs and treatments, as well as counseling and therapy are available to help people “de-stress” and relax.

	COMPANY	PRODUCT	PHASE
Stress	TheraLife, Inc.	TheraLife fatigue	M

West Syndrome

West syndrome, also known as infantile spasm, is a rare serious form of epilepsy in infants. The syndrome is age-related and generally occurs between the 3rd and 12th month of life. It is often caused by an organic brain dysfunction, the origins of which may be prenatal, perinatal, or postnatal. Scientific research estimates that prevalence is approximately 1 in 4,000 to 6,000 infants, with boys more likely (3:2) to be affected than girls. Unfortunately, up to 90 percent of children suffer severe physical and cognitive impairments that stay with them throughout their lives. Permanent brain damage can lead to learning disabilities, behavioral problems, cerebral palsy, and autism. Like other epilepsies, West syndrome is difficult to treat but if caught early, treatments may be available.

	COMPANY	PRODUCT	PHASE
West Syndrome	Questcor Pharmaceuticals, Inc.	HP Acthar Gel (Repository Corticotropin Injection)	M

