

OSMOSIS MED

LEARN
MEDICINE
WITH
YOUR
FAVORITE
CELEBRITIES!

200

Mind-Stimulating*
Questions

Test High Yield Facts

ACE THE BOARDS



Sjögren's
Signs and
Symptoms for
an earlier
diagnosis

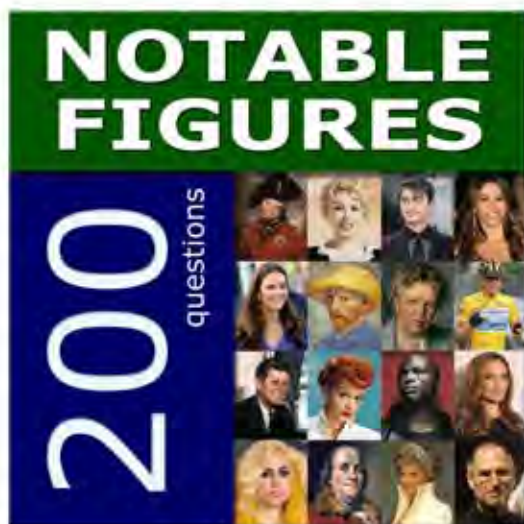


Bleomycin
The drug that
could have
ended his
career



BRCA
Angelina's
Brave
Choice

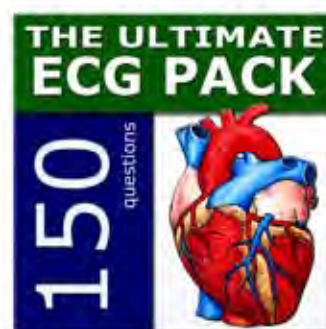




*Did you know that the celebrity and notable figures pack is based in cognitive neuroscience? Read more about how this works and why Osmosis is pioneering this approach in [Fast Company](#):

<http://bit.ly/MemoryHack>

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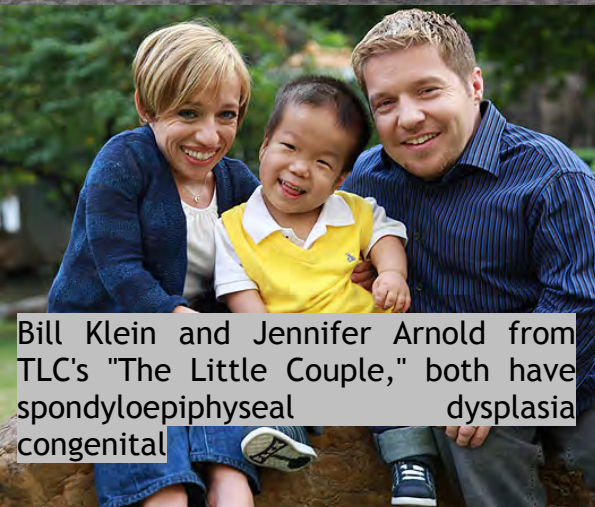
**STARS
are just
like us!**

Actor Peter Dinklage



They are short

Achondroplasia is caused by a mutation in the fibroblast growth factor receptor 3 (FGFR3).



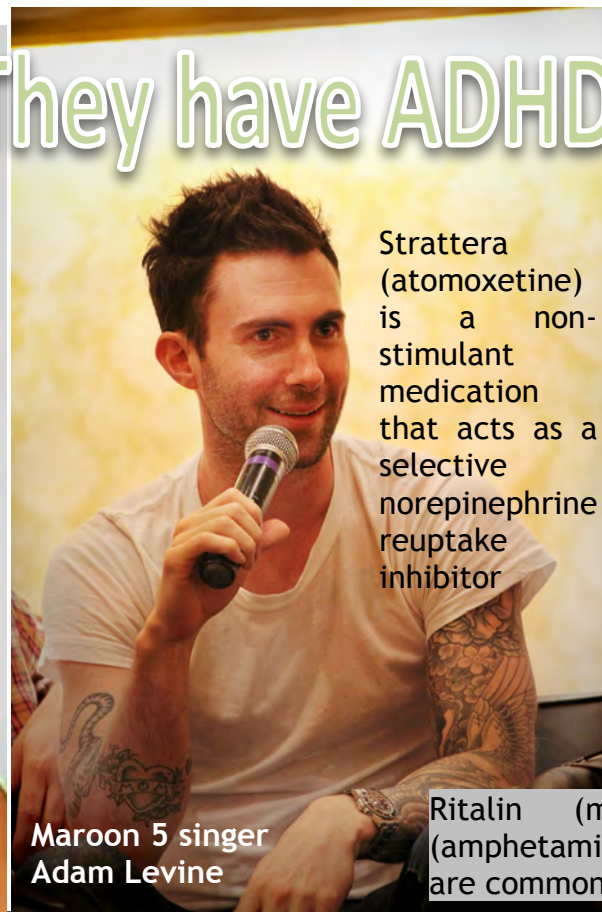
Bill Klein and Jennifer Arnold from TLC's "The Little Couple," both have spondyloepiphyseal dysplasia congenital

Heiress Paris Hilton



Treatment of ADHD involves both pharmacologic and non-pharmacologic treatment. Both stimulant and non-stimulant classes of medications can be used to treat ADHD.

They have ADHD



Maroon 5 singer Adam Levine

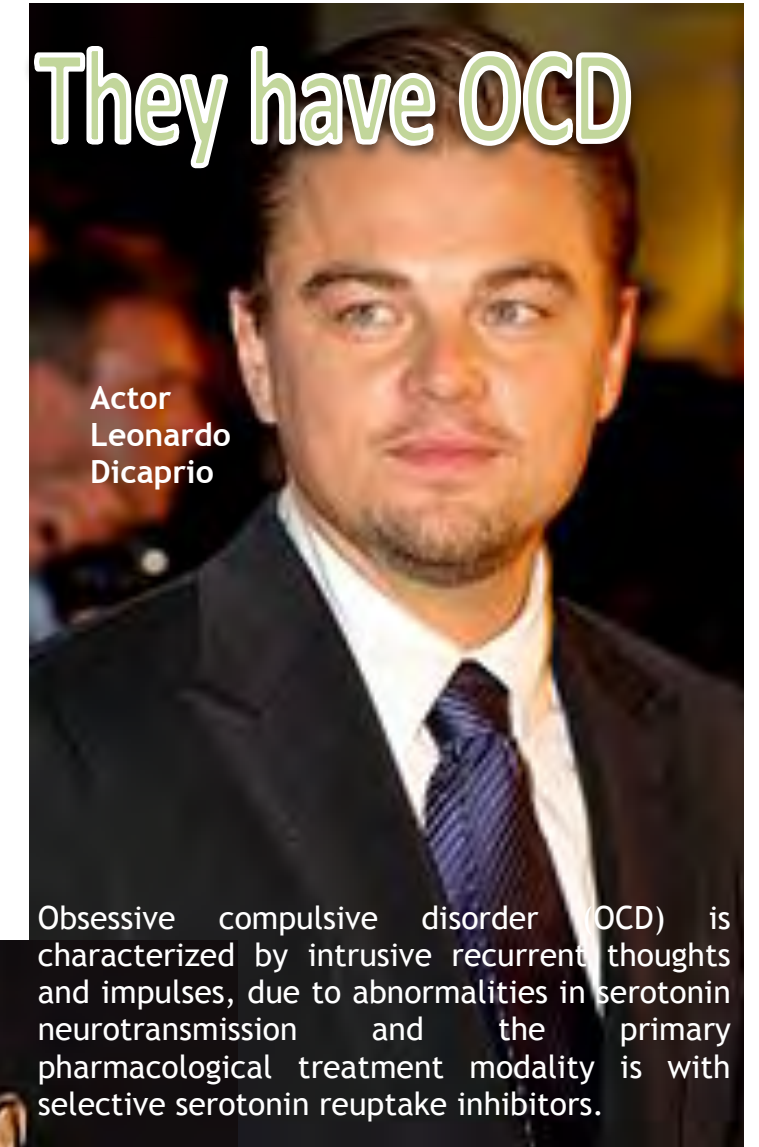
Strattera (atomoxetine) is a non-stimulant medication that acts as a selective norepinephrine reuptake inhibitor

Ritalin (methylphenidate) and Adderall (amphetamine) are stimulant medications that are commonly used as 1st line treatment.



Olympian Michael Phelps

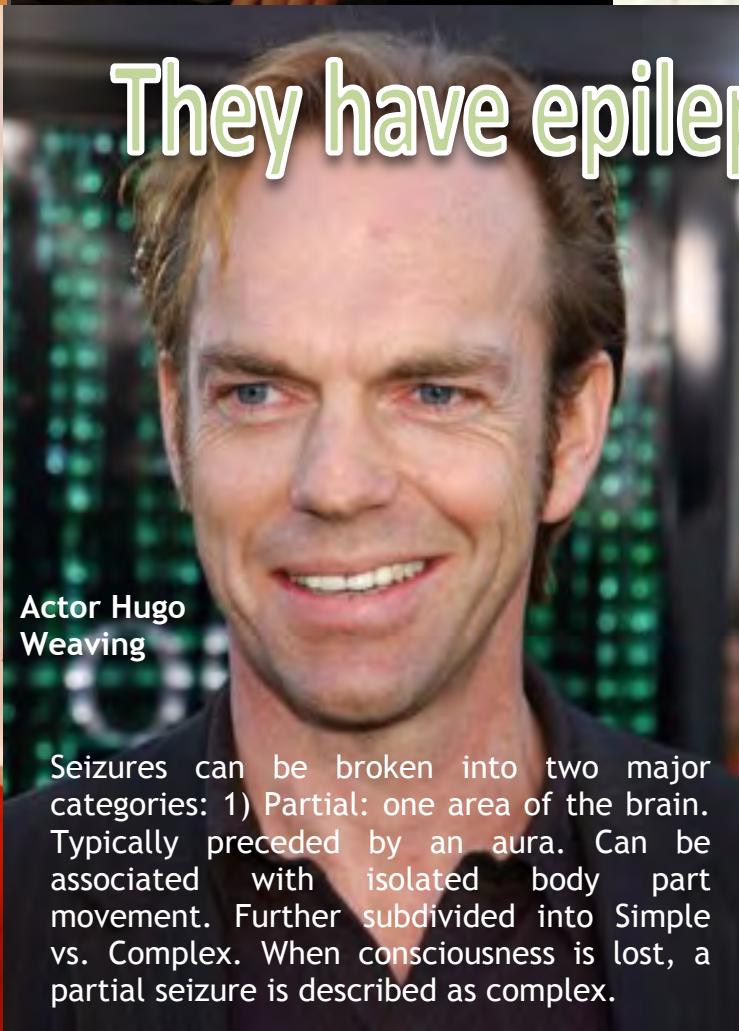
They have OCD



Actor Leonardo DiCaprio

Obsessive compulsive disorder (OCD) is characterized by intrusive recurrent thoughts and impulses, due to abnormalities in serotonin neurotransmission and the primary pharmacological treatment modality is with selective serotonin reuptake inhibitors.

They have epilepsy



Actor Hugo Weaving

Seizures can be broken into two major categories: 1) Partial: one area of the brain. Typically preceded by an aura. Can be associated with isolated body part movement. Further subdivided into Simple vs. Complex. When consciousness is lost, a partial seizure is described as complex.



Singer Prince

2) Generalized Seizures: Affecting all areas of the brain. Further subdivided into:

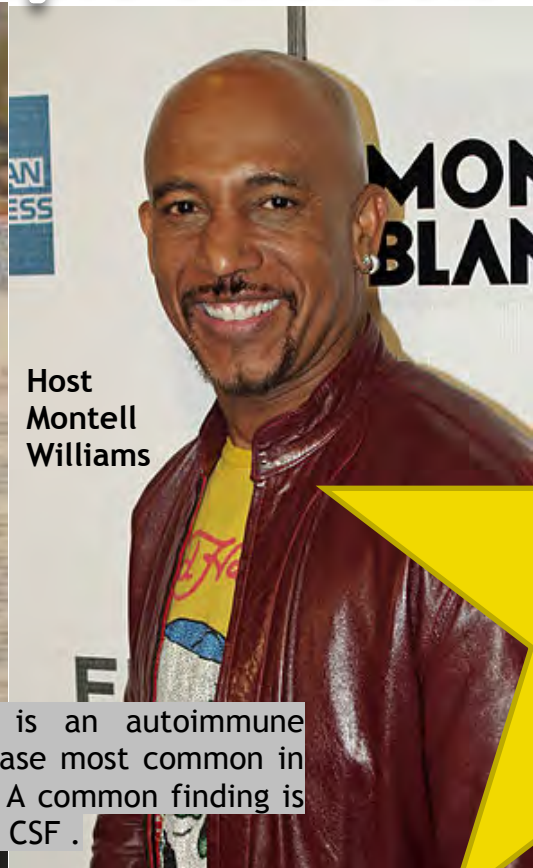
- Absence (staring),
- Tonic-Clonic (jerking and tensing)
- Myoclonic (repetitive movement)
- Tonic (tensing)
- Atonic ("drop" seizures)

**They
get sick
too!**

They have Multiple Sclerosis



Reality Star
Jack Osbourne



Host
Montell
Williams

Multiple sclerosis is an autoimmune demyelinating disease most common in Caucasian women. A common finding is elevated IgG in the CSF .

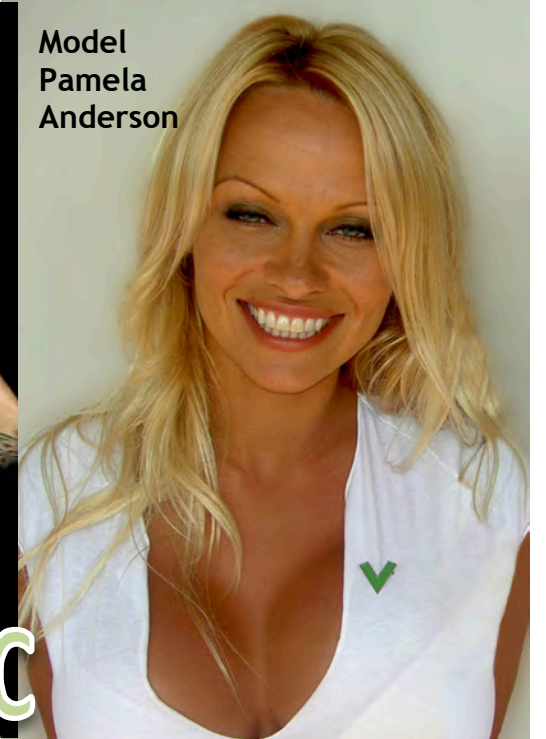
They
battle
chronic
disease!



Aerosmith singer
Steven Tyler



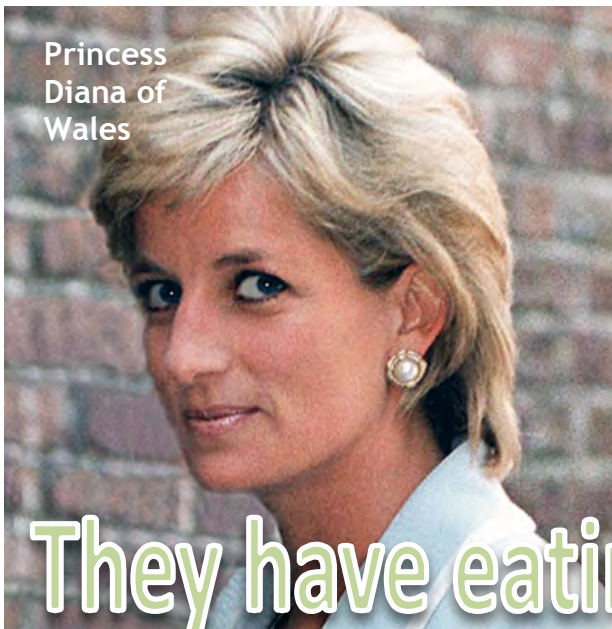
Red Hot Chili
Pepper's
Anthony Kiedis



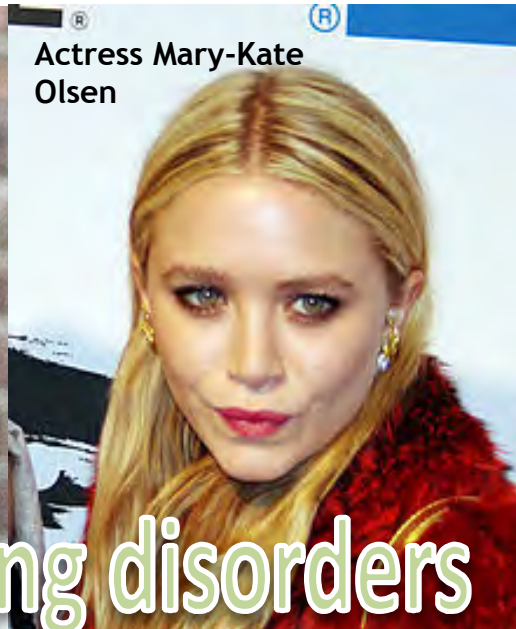
Model
Pamela
Anderson

They have Hep C

Hepatitis C is a positive-sense single-stranded RNA flavivirus that is acquired through sexual contact or injection drug use with contaminated needles. Most cases of acute hepatitis C infection become chronic, and without medical management, may further develop into decompensated liver disease.



Princess
Diana of
Wales



Actress Mary-Kate
Olsen

They have eating disorders

Bulimics can purge in various ways including laxative and diuretic abuse, however vomiting is the most common practice. Anorexia nervosa is characterized by distortion of body image, shape, and weight. Patients who suffer from anorexia have low body weight and present with amenorrhea.



Actress Susan
Sarandon



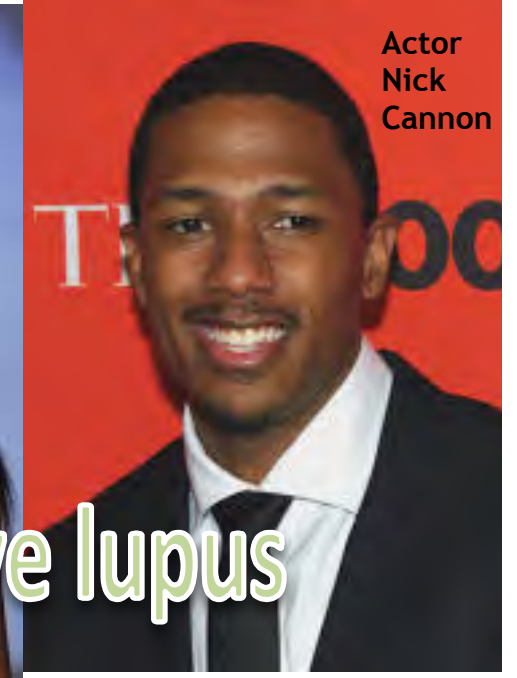
Host
Padma
Lakshmi

They have endometriosis

Endometriosis is a poorly understood condition in which endometrial cells from the uterus are found outside of the uterine cavity, leading to painful pelvic pain particularly during menses and sexual intercourse.



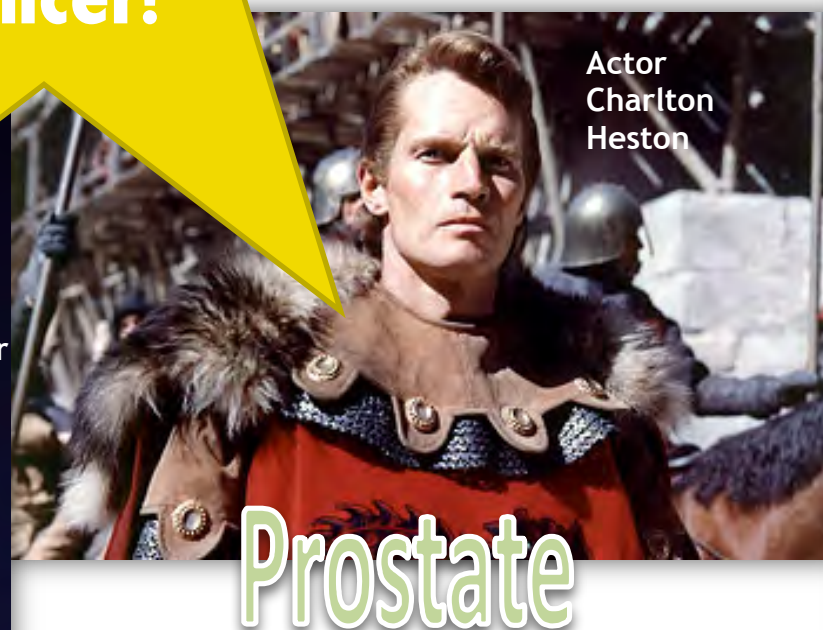
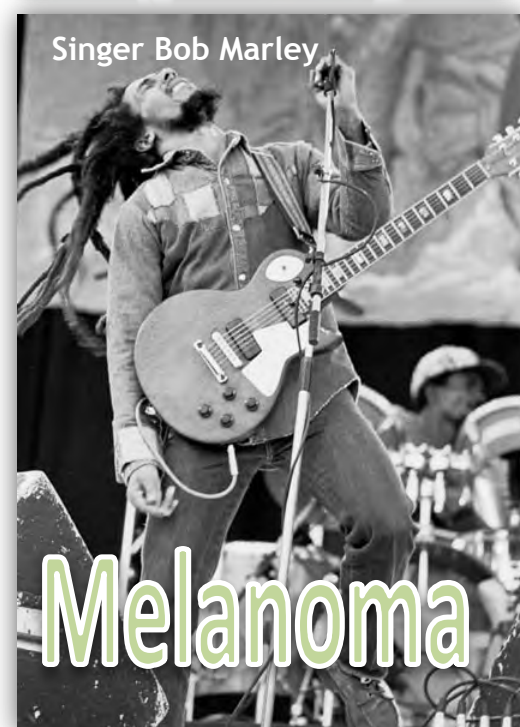
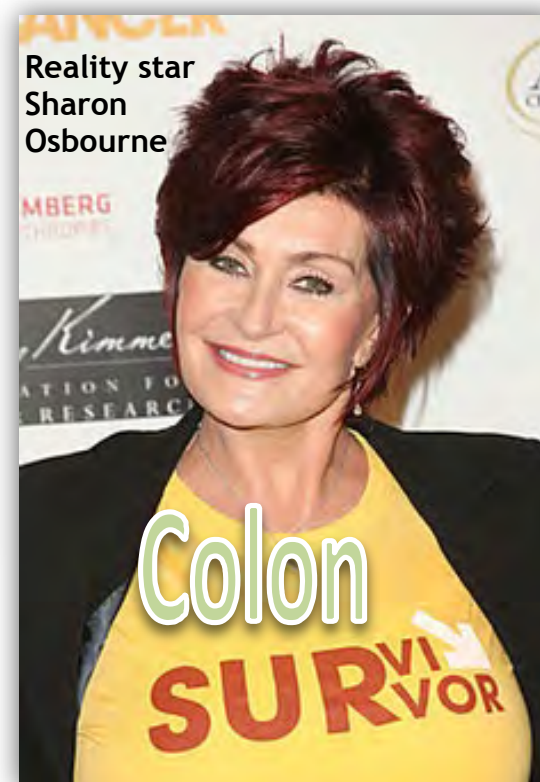
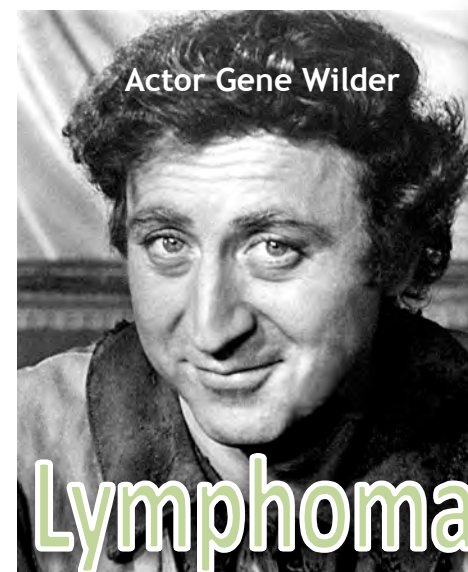
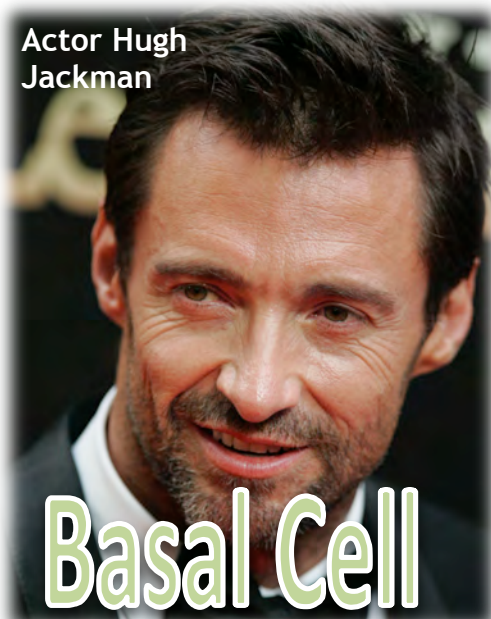
Singer
Toni
Braxton



Actor
Nick
Cannon

They have lupus

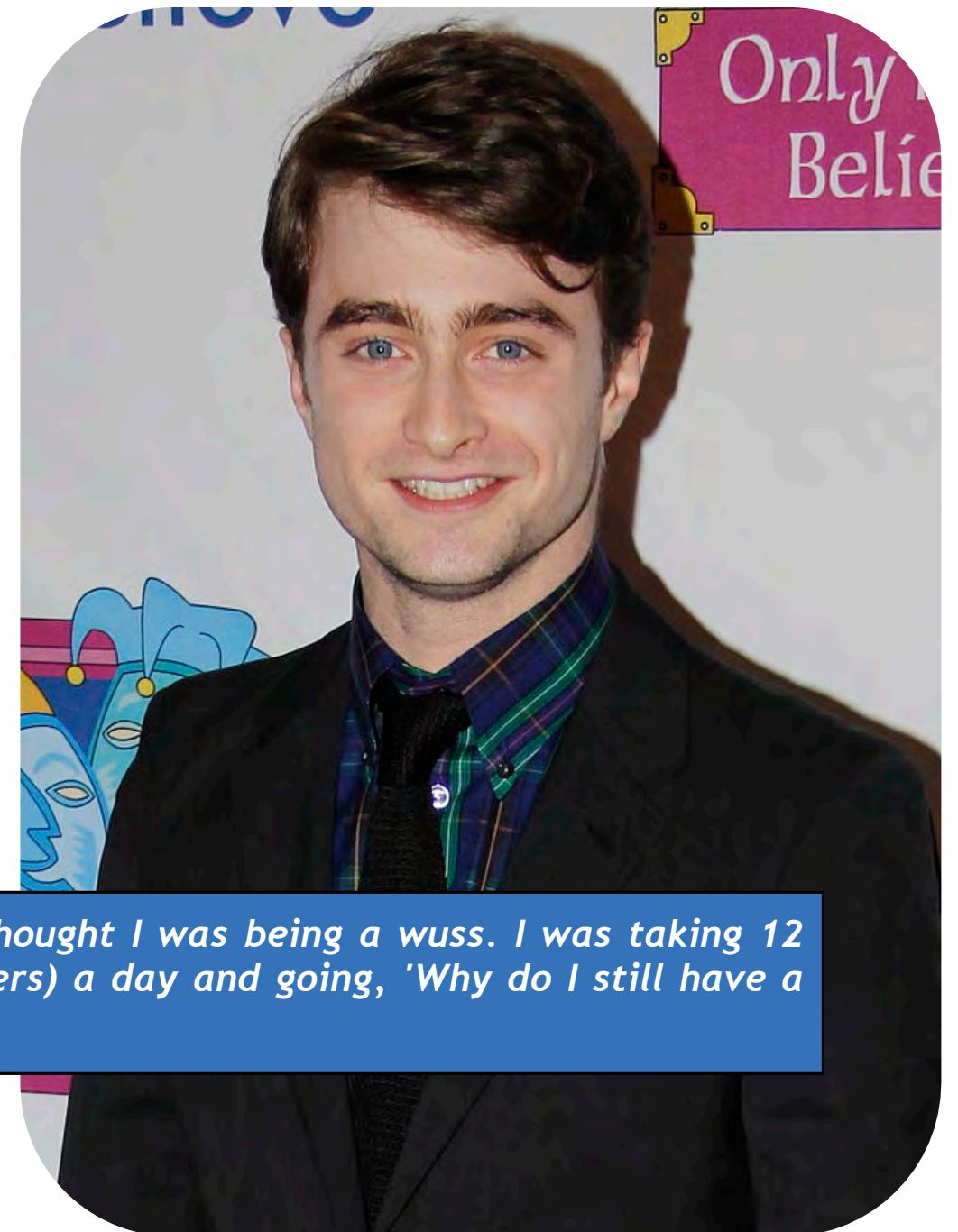
Lupus is an inflammatory autoimmune disease. American College of Rheumatology (ACR) criteria is listed below using the SOAP BRAIN MD mnemonic: Serositis Oral ulcers Arthritis Photosensitivity Blood disorder Renal Involvement ANA Igs Neurologic disorder Malar rash Discoid rash



Daniel Radcliffe



Cluster headaches are a specific type of headache usually cyclical in nature with a set of diagnostic characteristics. The first line treatment for cluster headaches is always oxygen because of its efficacy and lack of side effects. If oxygen fails to reduce symptoms, triptans are the next line of therapy.



"Actor Daniel Radcliffe who played Harry Potter has a rare and agonising medical condition called cluster headaches"

-The Telegraph, Entertainment
(June 19, 2012)

He was forced to cancel a number of professional commitments earlier this year [2012] when the pain became so extreme he sought medical attention. He was diagnosed as suffering from a condition which causes intense pain on one side of the head and is experienced by just one percent of the population.

"I was in the middle of these weird things called 'cluster headaches'. It's very rare evidently, but it's exceptionally painful. It makes a migraine look quite tame," Radcliffe has told The Independent newspaper in the UK. "At the time I thought I was being a wuss. I was taking 12 (strong painkillers) a day and going, 'Why do I still have a headache?' he said.

Diagnostic Criteria: At least five attacks; Attacks characterized by severe or very severe unilateral orbital, supraorbital and/or temporal pain lasting 15 to 180 minutes when untreated; during part (but less than half) of the time-course of cluster headache, attacks may be less severe and/or of shorter or longer duration.

Symptoms include: Conjunctival injection and/or lacrimation; Nasal congestion and/or rhinorrhea; Eyelid edema; Forehead and facial sweating; Forehead and facial flushing; Sensation of fullness in the ear; Miosis and/or ptosis; A sense of restlessness or agitation. Attacks have a frequency between one every other day and eight per day for more than half of the time when the disorder is active. Not better accounted for by another ICHD-3 diagnosis

Diagnostic criteria for **episodic cluster headache** require the following: Attacks fulfilling criteria for cluster headache and occurring in bouts (cluster periods). At least two cluster periods lasting from seven days to one year (when untreated) and separated by pain-free remission periods of one month or more
Diagnostic criteria for **chronic cluster headache** require the following: Attacks fulfilling criteria for cluster headache; Attacks occurring without a remission period, or with remissions lasting less than one month, for at least one year.

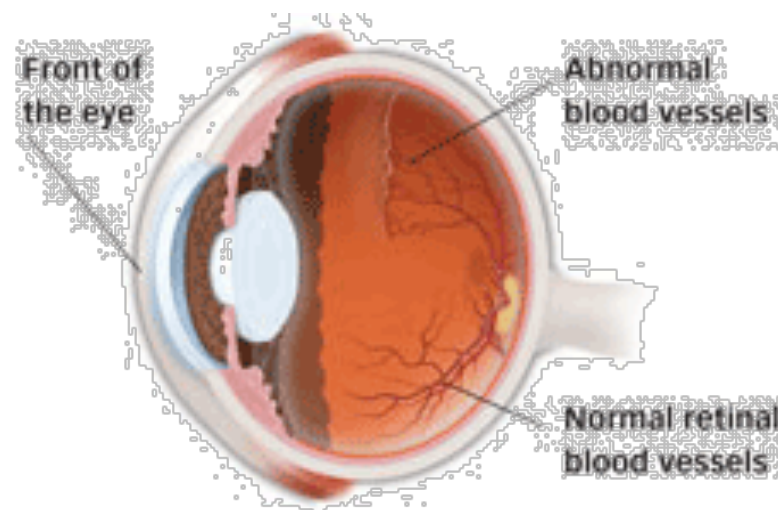
'At the time I thought I was being a wuss. I was taking 12 (strong painkillers) a day and going, 'Why do I still have a headache?'

Actor Daniel Radcliffe, famous for his role in the *Harry Potter* movie series, suffers from cluster headaches.

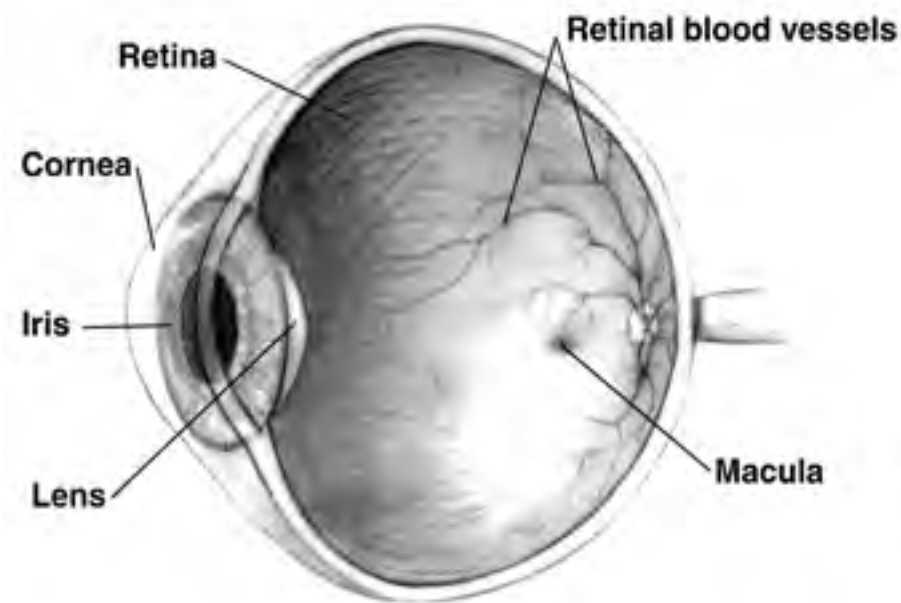
STEVIE WONDER

Stevie Wonder on Larry King Live
-Nov 30, 2010

“Well, actually, I was not born blind but shortly after that because of being premature I had been in the incubator. I may have [seen some light]. I think the retrolental fibroplasia, that's what it's called. And it happened anyway from the temperature of the incubator or having too much oxygen...many kids that were born in the '50s, before the doctor discovered that, you know, there was another way to do it...I became blind.”



Retinopathy of prematurity (ROP) is a disease of the eye affecting premature infants, especially those who have required stays in an intensive care unit. ROP is thought to be caused by disorganized growth of retinal blood vessels which may result in scarring and retinal detachment. ROP can be mild and may resolve spontaneously, but it may lead to blindness in serious cases. As such, all preterm babies are at risk for ROP, and very low birth weight is an additional risk factor.



“Well, actually, I was not born blind but shortly after that because of being premature I had been in the incubator...with too much oxygen.”



Musician Stevie Wonder was born six weeks prematurely and developed Retinopathy of Prematurity (ROP) after spending time in an oxygen rich incubator as an infant. He has been blind his whole life.

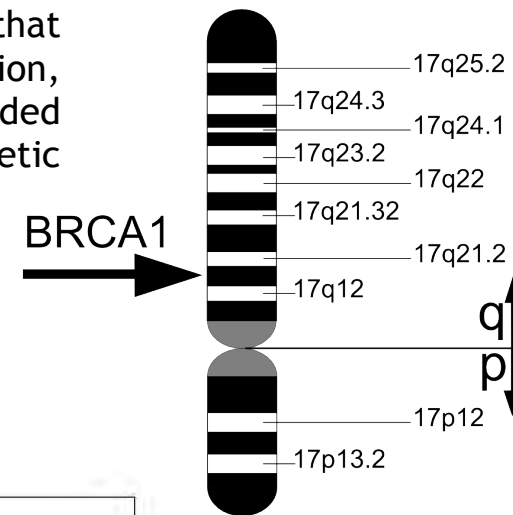
ANGELINA JOLIE

Says Jolie, "I choose not to keep my story private because there are many women who do not know that they might be living under the shadow of cancer. It is my hope that they, too, will be able to get gene tested, and that if they have a high risk they, too, will know that they have strong options."

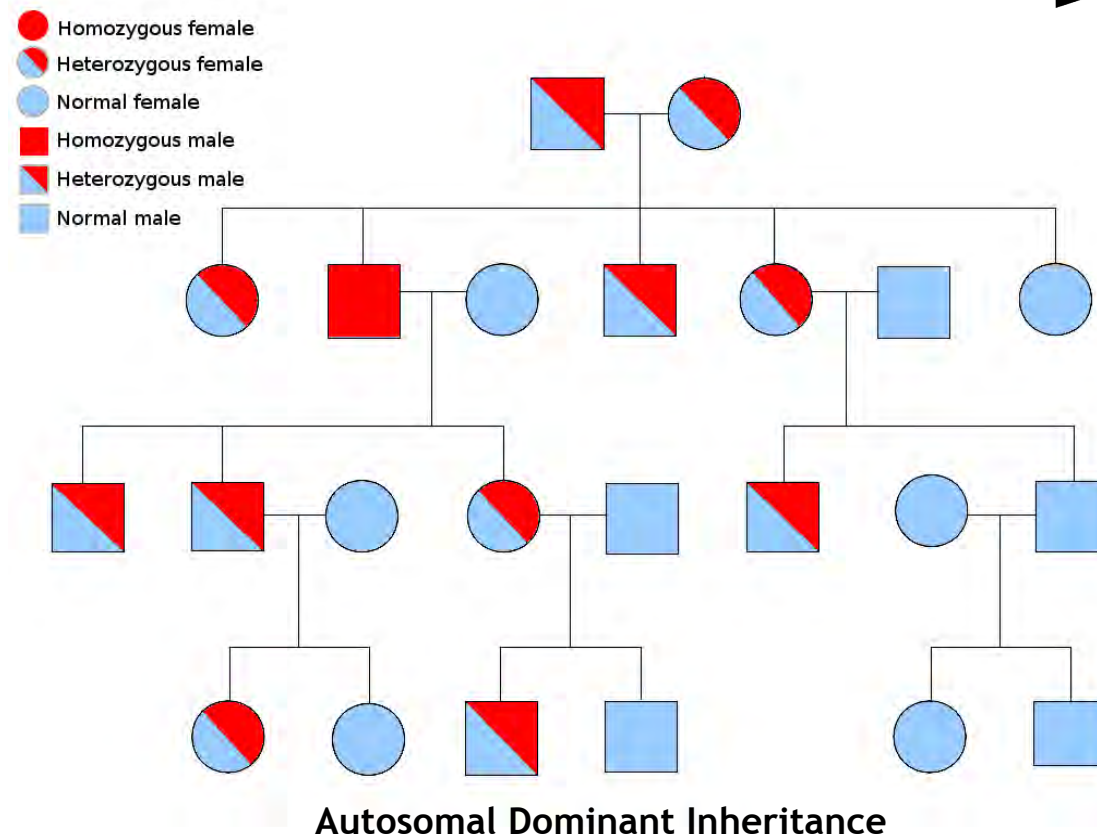
"My Medical Choice" New York Times (May 14, 2013)

BRCA1 is a tumor suppressor gene on chromosome 17. It encodes a phosphoprotein that plays a role in transcription, DNA repair of double-stranded breaks, and genetic recombination.

Chromosome 17



Her family history warranted genetic testing for BRCA mutations: her mother, actress Marcheline Bertrand, had breast cancer and died from ovarian cancer at the age of 56, while her maternal grandmother had ovarian cancer and died aged 45. Her maternal aunt Debbie Martin, who had the same defective BRCA1 gene as Jolie, was diagnosed with breast cancer in 2004 and died at age 61 on May 26, 2013. Jolie's mastectomy lowered her chances of developing breast cancer to under 5 percent, and testing of the removed breast tissue showed no signs of cancerous cells.



"I choose not to keep my story private because there are many women who do not know that they might be living under the shadow of cancer. It is my hope that they, too, will be able to get gene tested, and that if they have a high risk they, too, will know that they have strong options."

Angelina Jolie, American actress, underwent prophylactic bilateral mastectomy because she possessed a BRCA1 mutation that greatly elevated her likelihood of developing breast and ovarian cancer. She has been very vocal about her decision, and made plans to undergo prophylactic bilateral oophorectomy as well.



Kim Kardashian

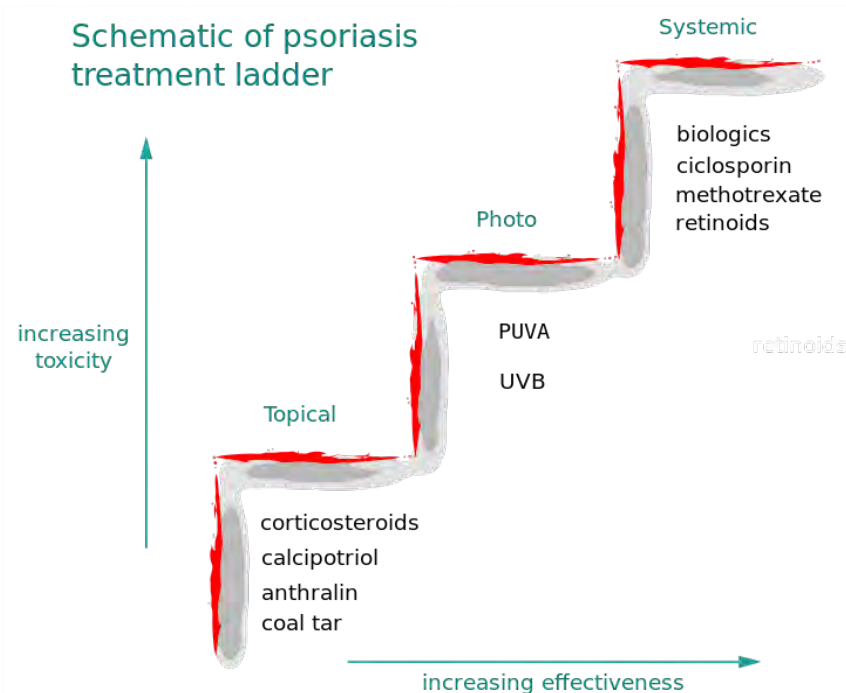
Kim Kardashian: Pregnancy Can Worsen Her Psoriasis
-Hollywood Life, Mar 13, 2013

Kim Kardashian was spotted with more splotches on her legs when she stepped out in a white skirt on March 12 in Los Angeles. With her skin breaking out more than normal halfway through her pregnancy, Dr. Bruce Katz reveals the cause of her troublesome condition! Kim K has been candid about her skin condition, and has even detailed the flare-ups on her show "Keeping Up with the Kardashians." But now that she's halfway through her pregnancy with boyfriend Kanye West's baby, it could be making the problem worse. "Psoriasis can be activated on any major change on the system, from stress and scratching." Hormonal and circulatory changes can cause a flare up. Even if Kim's chronic immune disease are bothering her, it's likely she can't get treatment while she's pregnant since she has most likely been told to not use the common psoriasis treatment cortisone, which is applied to the skin. "She may have been instructed to not use it regularly, or not use it at all since she is pregnant," said Dr. Sobel. He adds that the corticosteroid would get into the blood stream and affect the baby. Pregnant women should lower medication or if they could, avoid it. "Most likely, her OBGYN would have her lay off the chemicals as much as possible," he says.

Not only is Kim pregnant — she has been dealing with a lot of external stress, and was even rushed to her doctor's office following a frightening plane ride from Paris to Los Angeles. "The stress in general could have flared up psoriasis, and obviously the stress from a pregnancy can cause emotional stress," Dr. Sobel says. It's also very possible that struggling with a new body, dealing with a very drawn out divorce, and juggling her many businesses could cause a flare up! Dr. Katz assures that even though pregnant women have to avoid chemicals, there are plenty of other treatments they can use. "That is a problem because you are very limited on what you can use when one is pregnant," he says. But he suggests a specialized light treatment for Kim, which would involve her getting into a light box would be safe. It's not like tanning, because it's a special wavelength of light. It will work on psoriasis but doesn't hurt the skin. You may remember that Kim tried rubbing Kourtney's breast milk on her skin to relieve her psoriasis, but Dr. Sobel doesn't believe that's a smart idea. "I don't know anything saying that would make that better," he said.



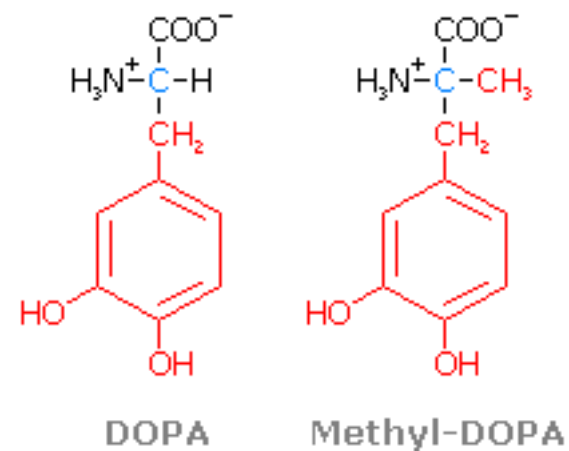
"The stress in general could have flared up psoriasis, and obviously the stress from a pregnancy can cause emotional stress." - Dr. Bruce Katz (Hollywood Life)



Psoriasis is a dermatological condition caused by accelerated proliferation of skin cells, leading to defective keratinization, and thus scaling. The disease is chronic, but classically comes with flares and remissions, resulting in well-delineated erythematous plaques with thick scaling. Auspitz's sign - removal of the scale causes bleeding. Treatment of the disease is by a step-wise progression of therapy. First line therapy generally involves topical corticosteroid creams. Kimberly Noel "Kim" Kardashian famously visited her dermatologist in a 2011 episode of "Keeping up with the Kardashians" for treatment of her psoriasis.

MICHAEL J. FOX

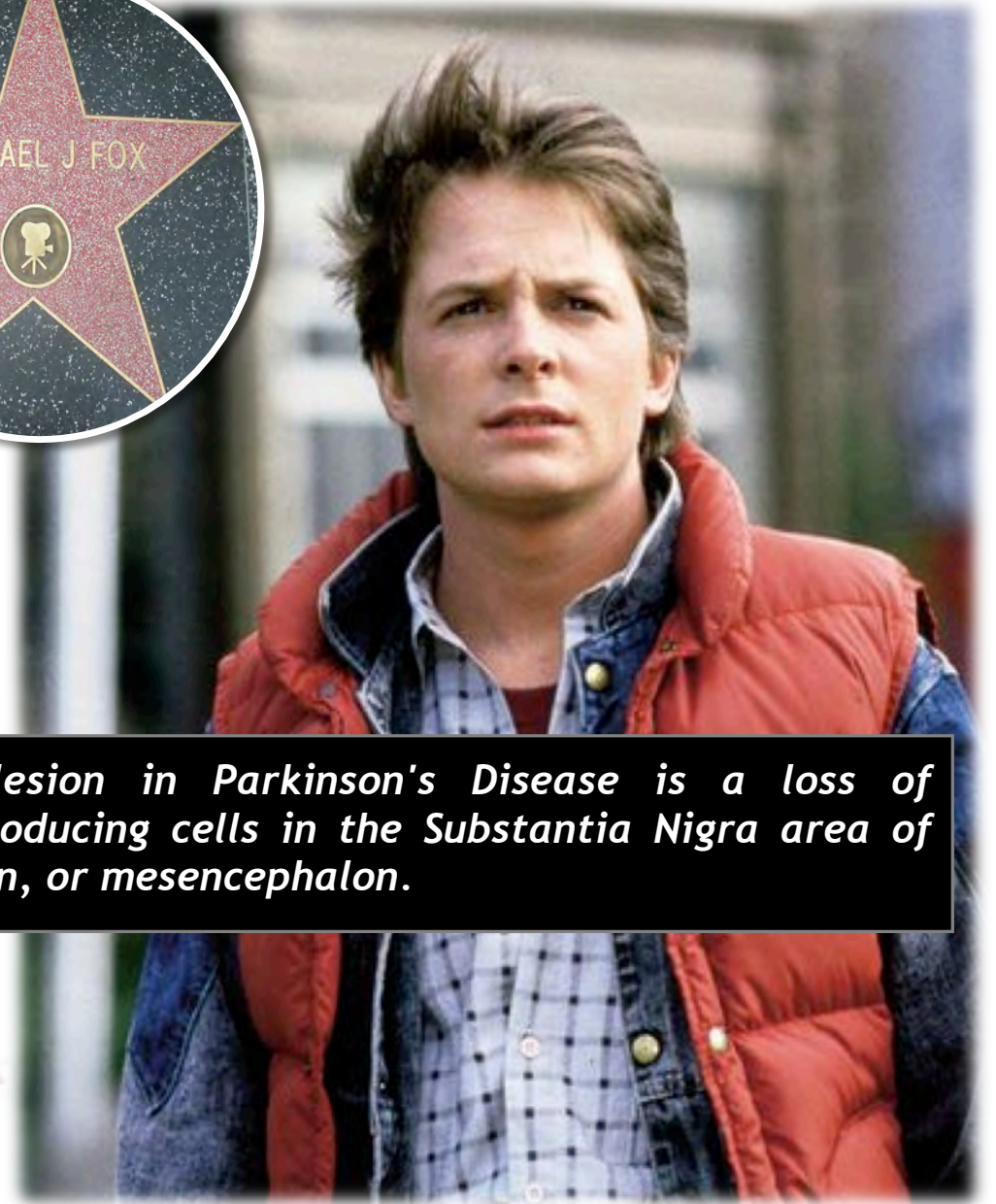
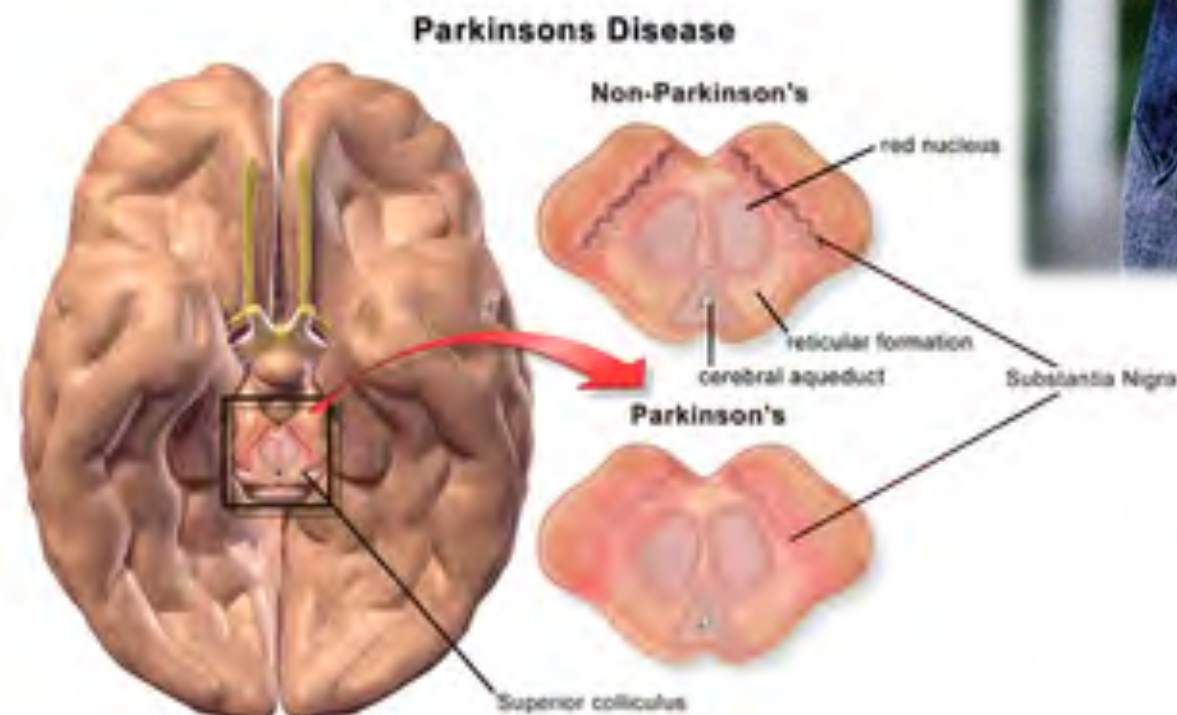
Michael J. Fox, a Canadian-born actor famous for his roles in movies like "Back to the Future" and television shows like "Spin City," was diagnosed at age 30 with Parkinson's Disease. He has since become an advocate for research and treatment of the disease.



An examination revealing shuffling gait and a "pill-rolling" resting tremor, in addition to a history of loss of balance and hypokinesia is consistent with the diagnosis of Parkinson's Disease. The age of onset less than 50 years may indicate the specific entity of Early-Onset Parkinson's Disease. The main lesion in Parkinson's Disease is a loss of dopamine-producing cells in the Substantia Nigra area of the mid-brain, or mesencephalon.



The main lesion in Parkinson's Disease is a loss of dopamine-producing cells in the Substantia Nigra area of the mid-brain, or mesencephalon.



Toni Braxton

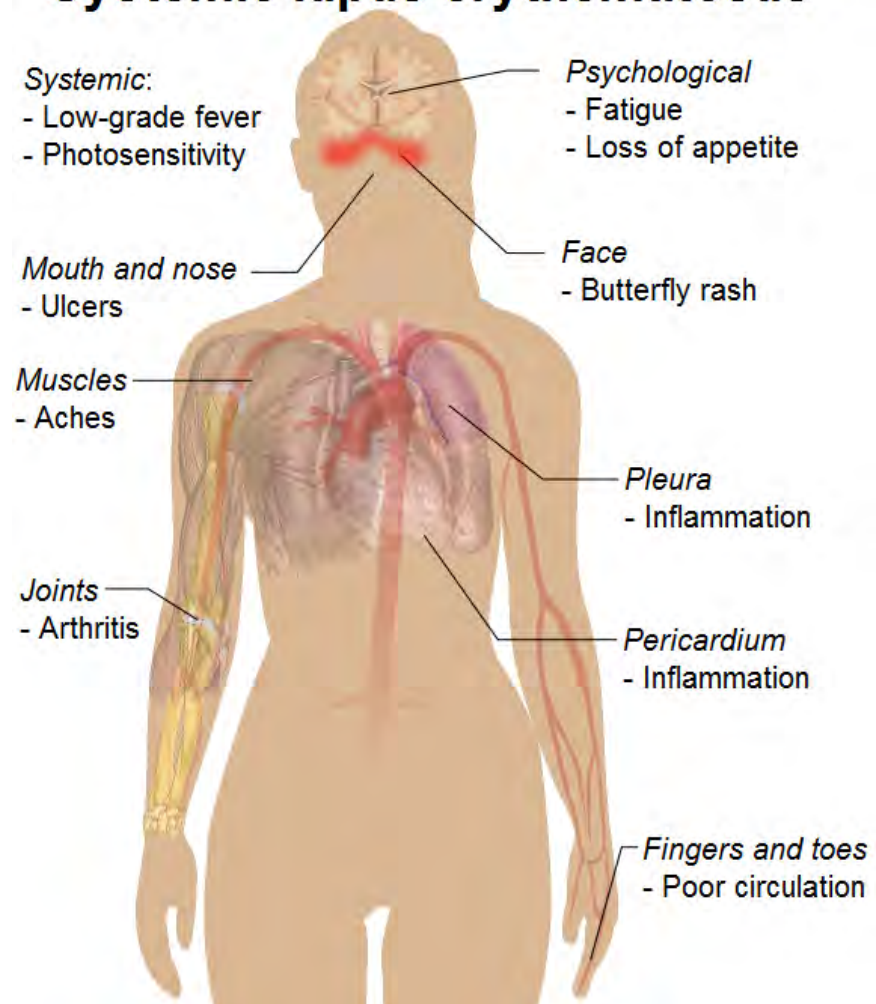
Lupus is an inflammatory autoimmune disease. ACR (American College of Rheumatology) criteria is listed below using the SOAP BRAIN MD mnemonic (4 out of 11 needed for diagnosis).

Serositis (pericarditis)
Oral ulcers
Arthritis
Photosensitivity

Blood disorder
(leukopenia)
Renal Involvement
ANA
Igs (anti-dsDNA, Smith, Phospholipid)
Neurologic Disorder
(Lupus cerebritis)

Malar Rash
Discoid Rash

Most common symptoms of Systemic lupus erythematosus



Braxton opens up about lupus and bankruptcy
-The Joy Behar Show, Apr 13, 2011

Toni Braxton found out her lupus diagnosis [in 2008] just before "Dancing with the Stars." She went undiagnosed for many years with symptoms of micro-vascular angina and chronic fatigue. "That blood window allowed them to see that it was lupus, because in the past I had pericarditis and things like that. My lupus loves my heart. But they missed the window of checking the blood. My white cells were like a 1.9. So I've had lupus all that time and just didn't know."

She also discusses her diagnosis and presenting symptoms here:
<http://on.aol.com/video/toni-braxton-on-living-with-lupus-517666915>

Toni Braxton, an American R&B singer, first discovered her lupus diagnosis in 2008 after developing pericarditis. (Ironically she is also the singer of the 1996 hit "Un-break my Heart").



Toni Braxton, an American R&B singer, first discovered her lupus diagnosis in 2008 after developing pericarditis. (Ironically she is also the singer of the 1996 hit "Un-break my Heart"). She then continued to have problems with her heart and her course was complicated by a pulmonary embolism.

US History: “Knowledge Blasts from the Past”

Politics



The Roosevelts

Franklin Delano Roosevelt was a former US president who contracted poliomyelitis in 1921. There is controversy whether the disease that paralyzed FDR was polio vs Guillan-Barre syndrome.

Eleanor Roosevelt, wife of FDR, died from disseminated TB at age 78. Disseminated TB develops in the small number of infected people whose immune systems do not successfully contain the primary infection.



Benjamin Franklin, an important political thinker, politician and polymath during the American Revolutionary

period, also famously suffered from gout in his later years. Gout and other health problems affected him so greatly that after the signing of the US Constitution in 1787, he rarely made public appearances.

Pop Culture



Zelda Fitzgerald, American writer and wife of F. Scott Fitzgerald, was institutionalized in her later life for disorganized behavior and ultimately died at age 47 after having been diagnosed with schizophrenia.



Lucille Ball, star of 1950's American sitcom 'I Love Lucy', died at age 77 of a dissecting aortic aneurysm. Aortic dissection is a tearing of the aortic wall causing blood to enter the media and produce a false lumen parallel to the actual aortic lumen. This classically presents with "tearing" chest and back pain, hemodynamic instability, higher BP in the right arm than left, and other signs of end-organ damage.

Medicine

William Stewart Halsted may have suffered an MI, and he was addicted to cocaine. This prominent general surgeon from the early twentieth century was considered one of the "Big Four" founding physicians of Johns Hopkins Hospital. One of his biggest contributions to surgery was developing improved aseptic technique in the OR.



“Typhoid Mary” or Mary Mallon worked as a cook in the US and was identified as an asymptomatic carrier of salmonella typhi. She is thought to have infected 49 people through her career, 3 of whom died from the disease.



World History

World Leaders



Alexander the Great,

born in 356 BCE, he ruled the Greek kingdom of Macedon and became one of history's greatest generals. During one of his

eastern campaigns that he is thought to have died from complications of Typhoid Fever at the age of 32.



Napoleon Bonaparte

had Gilbert's disease in which a mutation in glucuronyl transferasefamilial reduces, but does not completely eliminate, its ability to conjugate bilirubin. Some patients with Gilbert's syndrome develop jaundice and scleral icterus, however most are asymptomatic. Treatment is usually not necessary.



Vladimir Lenin,

Russian political theorist and

Communist Revolutionary, died in 1924 from complications of multiple strokes. His autopsy revealed extensive medium and large vessel atheromatotic changes, particularly in cerebral blood supply, consistent with Treponemal infection. It is now thought that Lenin's progressive paralysis and loss of cognitive ability was the result of neurosyphilis.



Eva (Evita) Peron,

second wife of former Argentine president Juan Peron, had cervical cancer. Unfortunately for her, her diagnosis was made very late, after

she had frequent vaginal bleeding and multiple episodes of fainting. It is thought that she underwent a radical hysterectomy, but did not live for many years beyond this.



Marie Curie

was the first woman to win the Nobel Prize for her research on radioactivity. She died from complications of aplastic anemia caused by her long term, unprotected radiation exposure.



Sigmund Freud

died of oral cancer at age 83. He smoked 20 cigars a day. Risk factors for oral cancer include excessive alcohol use and tobacco consumption.



Charles Darwin,

the evolutionary biologist likely had cyclic vomiting syndrome for over three decades. CVS is characterized by recurrent, discrete,

stereotypical episodes of rapid-fire vomiting between varying periods of completely normal health. It is more common in children but can also present in young adults in their 20s and 30s. The pathophysiology is unclear, although relationship with abdominal migraines have been suggested. Treatment is anti-emetics and IV hydration with amitriptyline for prophylaxis.

Arts & Entertainment



The Mona Lisa,

by Leonardo da Vinci in 1507 had evidence of an irregular yellow spot in the upper left eyelid and an irregular swelling of the dorsum of the right hand Combined with her young death of 37, it has been suggested that she might have had Familial Hypercholesterolemia.



Vincent van Gogh

was a post-impressionist painter who suffered from Meniere's disease, and some believe the illness caused a severe depression, ultimately ending in suicide.



Wolfgang Amadeus Mozart,

the eighteenth century musical composer, died at 35 of what is believed to be a chronic subdural hematoma that he developed after injuring his head while inebriated.

Science

JOHN FORBES NASH, JR.

"A Beautiful Mind"

John Nash on his battle with schizophrenia

"I spent times on the order of five to eight months in hospitals in New Jersey, always on an involuntary basis and always attempting a legal argument for release. And it did happen that when I had been long enough hospitalized that I would finally renounce my delusional hypotheses and revert to thinking of myself as a human of more conventional circumstances and return to mathematical research. In these interludes of, as it were, enforced rationality, I did succeed in doing some respectable mathematical research.

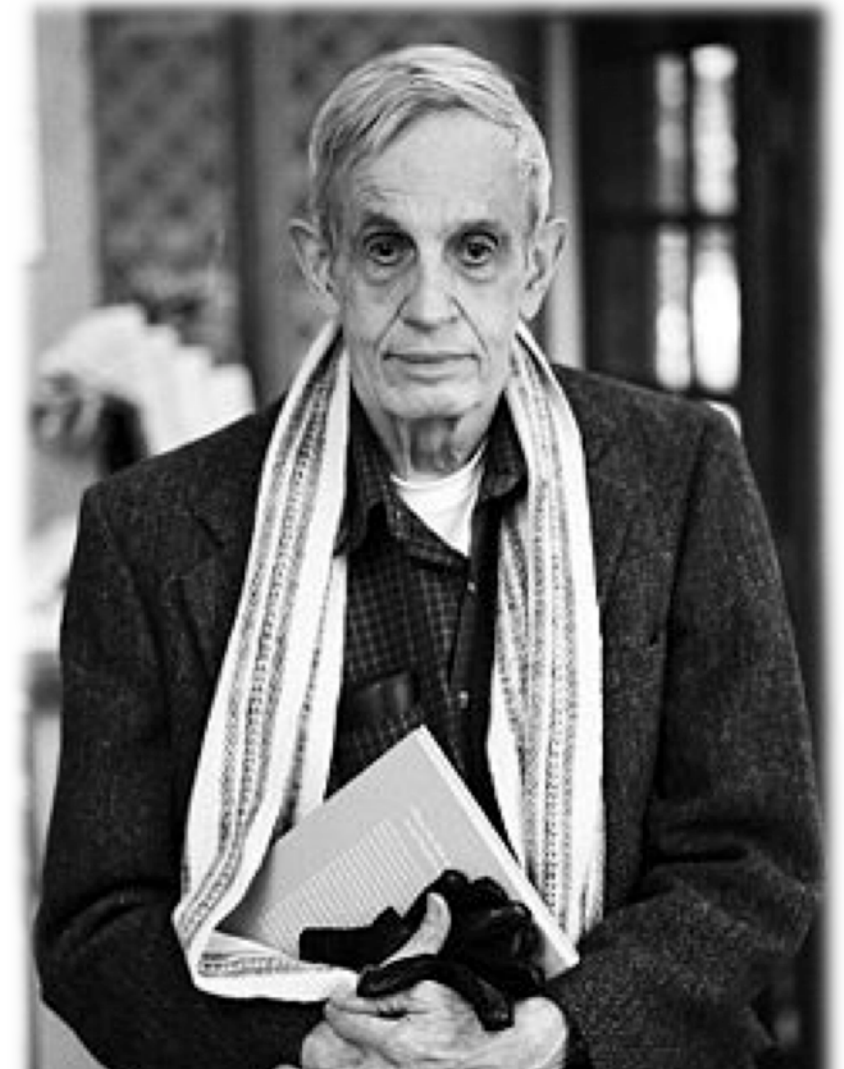
But after my return to the dream-like delusional hypotheses in the later 60's I became a person of delusionally influenced thinking but of relatively moderate behavior and thus tended to avoid hospitalization and the direct attention of psychiatrists. Thus further time passed. Then gradually I began to intellectually reject some of the delusionally influenced lines of thinking which had been characteristic of my orientation. This began, most recognizably, with the rejection of politically oriented thinking as essentially a hopeless waste of intellectual effort. So at the present time I seem to be thinking rationally again in the style that is characteristic of scientists."

"John F. Nash, Jr. - Autobiography". Nobel Foundation. 1994.

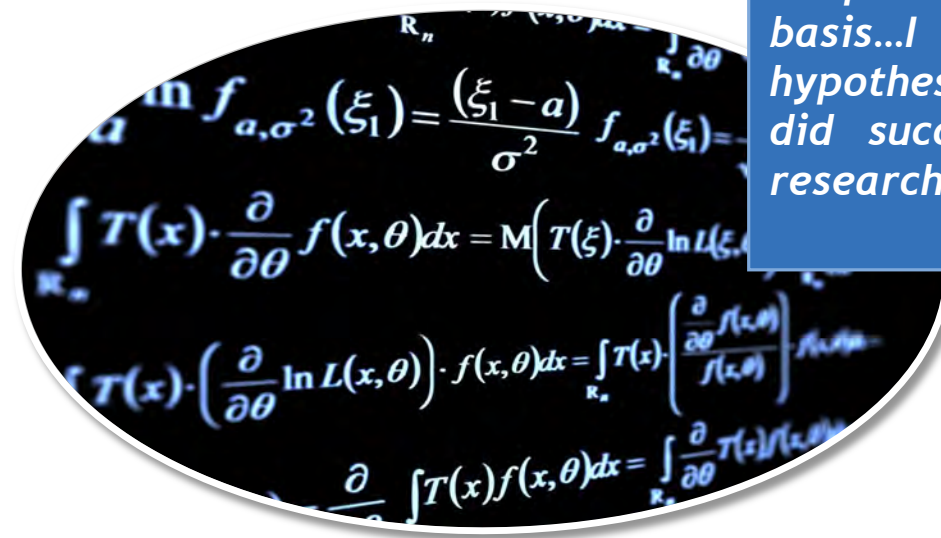
Nash began to show signs of extreme paranoia and his wife later described his behavior as erratic, as he began speaking of characters like Charles Herman and William Parcher who were putting him in danger. Nash seemed to believe that all men who wore red ties were part of a communist conspiracy against him. Nash mailed letters to embassies in Washington, D.C., declaring that they were establishing a government.

He was admitted to the McLean Hospital, April-May 1959, where he was diagnosed with paranoid schizophrenia. The clinical picture is dominated by relatively stable, often paranoid, fixed beliefs that are either false, over-imaginative or unrealistic, usually accompanied by experiences of seemingly real perception of something not actually present – particularly auditory and perceptual disturbances, a lack of motivation for life, and mild clinical depression.

In 1961, Nash was committed to the New Jersey State Hospital at Trenton. Over the next nine years, he spent periods in psychiatric hospitals, where, aside from receiving antipsychotic medications, he was administered insulin shock therapy.



"I spent months in hospitals always on an involuntary basis...I would finally renounce my delusional hypotheses...In these interludes of enforced rationality, I did succeed in doing some respectable mathematical research."



John Forbes Nash, Jr. is a Nobel Prize winning mathematician (and subject of the 2001 movie *A Beautiful Mind*) who struggled with paranoid schizophrenia. Although he tried several medications early on in the course of his disease, he has refused any medical treatment for the last thirty years.

MILES DAVIS

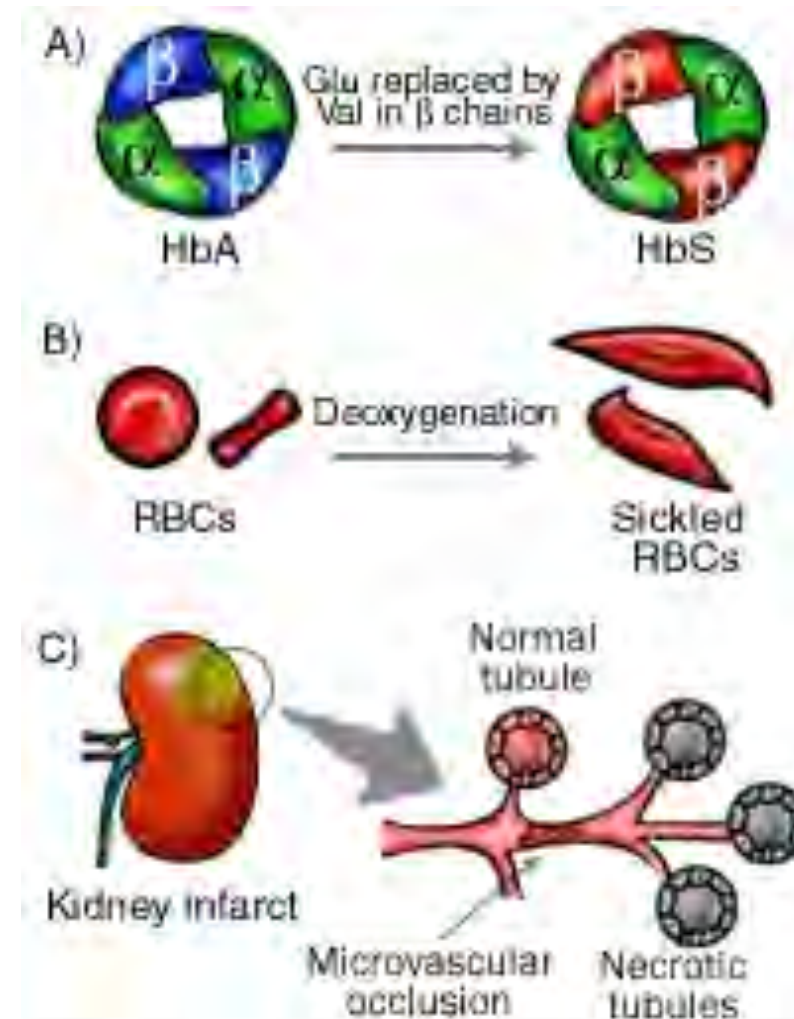
Jazz Innovator Miles Davis Dies At Age 65
-Sun Sentinel, Sept 29, 1991

Miles Davis, a trumpeter whose music continually redefined the limits of jazz and often confounded his listeners, died on Saturday. He was 65. Mr. Davis died of pneumonia, respiratory failure and a stroke at a hospital in Santa Monica, Calif., a statement released by his doctor and the hospital said.

Mr. Davis was plagued by bad health, including diabetes, hip problems related to sickle-cell anemia, and two bouts of drug addictions (heroin and cocaine).

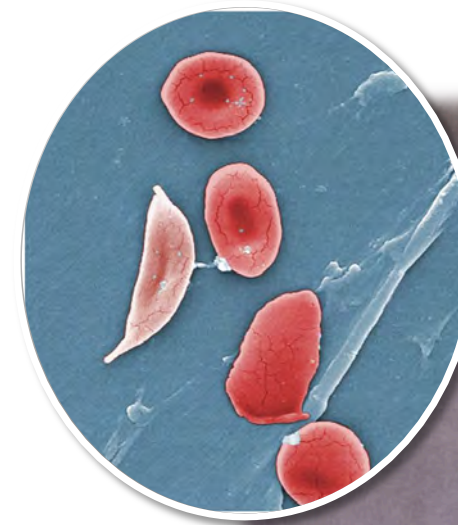


Avascular Necrosis (AVN) is an unfortunate complication of sickle cell disease and may affect up to 50% of individuals with sickle cell. It often occurs in children/adolescents and can be either bilateral or unilateral. Treatment options include conservative treatment and surgery.

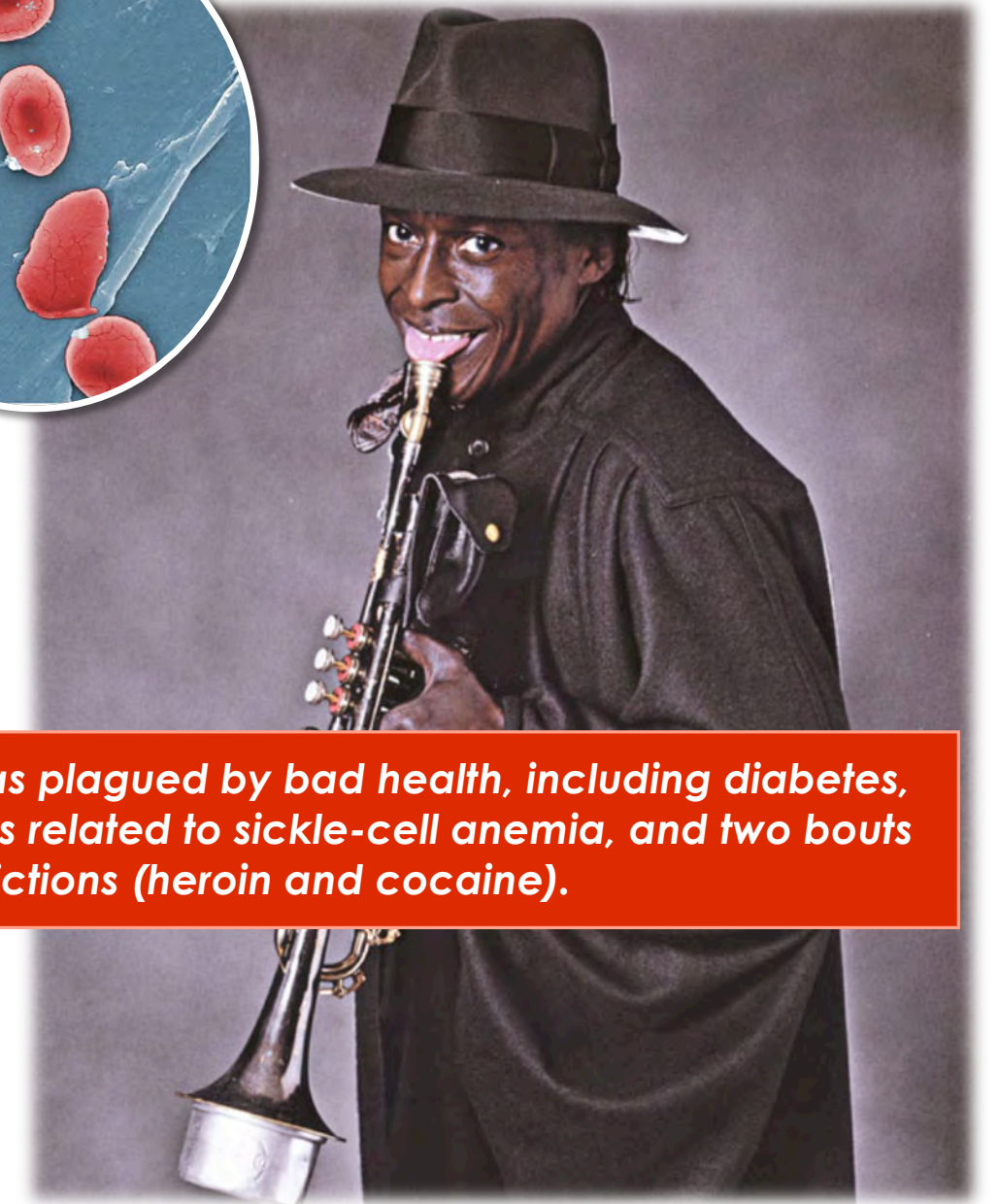


A) Hemoglobin is made up of 4 chains: 2 α and 2 β . In SCA, a point mutation causes the amino acid glutamic acid (Glu) to be replaced by valine (Val) in the β chains of HbA, resulting in the abnormal HbS. B) Under certain conditions, such as low oxygen levels, RBCs with HbS distort into sickled shapes. C) These sickled cells can block small vessels producing microvascular occlusions which may cause necrosis (death) of the tissue.

<http://www.ncbi.nlm.nih.gov/books/NBK22238/>



Mr. Davis was plagued by bad health, including diabetes, hip problems related to sickle-cell anemia, and two bouts of drug addictions (heroin and cocaine).



Jazz musician **Miles Davis** suffered from sickle cell disease and was noted to have avascular necrosis (AVN) of the hip.

ANCHORMAN: THE LEGEND OF...

Varicella Zoster Virus

(chicken pox) in adults often leads to hospitalization and an increased risk of pneumonia.

Aortic Stenosis typically presents with angina, syncope and symptoms of heart failure.

BARBARA WALTERS

Barbara Walters fainted at a British embassy dinner and was found to have chicken pox (varicella zoster virus infection). It is unusual (but not unheard of) for adults to get primary chicken pox. However, unlike children, their disease is often more serious. Although many adults with VZV infection will have an uncomplicated course, they are typically hospitalized and do have an increased risk of developing pneumonia when compared to children.

ABC's Walters was diagnosed with aortic stenosis at the age of 81, and underwent an aortic valve replacement in 2011. Aortic stenosis (AS) typically presents with angina, syncope and symptoms of heart failure. On physical exam, AS is characterized by a midsystolic crescendo-decrescendo murmur, best heard at the right upper sternal border (RUSB), that is harsh, high-pitched and radiates to the carotids. Typically the intensity of an AS murmur will increase with passive leg raise and decrease with standing or Valsava. AS is classified based on the mean pressure gradient across the aortic valve as well as the aortic valve area, both of which can be measured by echocardiogram.

Signs of severe AS include: - Late-peaking murmur - Paradoxically split S2 or inaudible A2 - Small and delayed carotid pulses (pulsus parvus et tardus) - An LV heave - An audible (and occasionally palpable) S4.

Viral conjunctivitis

(pink eye) is often caused by adenovirus.

It will often resolve spontaneously in 2-4 weeks.

BOB COSTAS

During the 2014 Sochi Winter Olympics, sportscaster Bob Costas had to don glasses because he had conjunctivitis (pink eye.) Conjunctivitis can be viral or bacterial. Viral conjunctivitis is often caused by adenovirus. It self-resolves in 2-4 weeks and treatment is supportive -- cold compresses and eye lubricants like artificial tears. Patients should be informed that it is very contagious and that they should wash their hands any time they touch their eyes.

Erythema nodosum

is an acute, nodular, erythematous eruption on the shins often associated with Crohn's Disease.

CYNTHIA MCFADDEN

Cynthia McFadden, ABC News correspondent, developed Crohn's disease (CD) when she was in high school. Erythema nodosum (EN) is an acute, nodular, erythematous eruption that presents on shins bilaterally. It is caused by inflammation of subcutaneous fat, and is tender to palpation. This rash can be caused by a variety of conditions, however inflammatory bowel disease - particularly CD has been associated. Cutaneous symptoms of CD usually present 3-7 years after the onset of GI symptoms.

Multiple Myeloma is a monoclonal plasma cell cancer that arises in the bone marrow.

TOM BROKAW

Multiple Myeloma is a monoclonal plasma cell cancer that arises in the bone marrow and typically produces large amounts of IgG (55% of cases) or IgA (25% of cases). MM often leads to numerous lytic bone lesions, (notice the lytic lesions present on the distal femur in the X-ray) as well as anemia, thrombocytopenia, hypercalcemia and renal insufficiency. On peripheral blood smear, Rouleaux formation is commonly observed (RBCs stacked on top of each other like poker chips). Other diagnostic findings can include IgG light chains in the urine (Bence Jones proteins) and an M spike on serum protein electrophoresis.



Chuck Pagano, Indianapolis Colts head coach was diagnosed with acute promyelocytic leukemia in September 2012. Pagano took an indefinite leave of absence of his coaching duties and underwent three months of treatment at the IU Simon Cancer Center in Indianapolis. On November 5, his doctors announced that Pagano's cancer was in remission.



Peyton Manning, NFL quarterback, was born with a cleft palate and had feeding issues as an infant. He ultimately underwent surgery to correct this condition. Cleft lip and palate result from incomplete fusion of various bones and structures during development. It occurs in 1/700 children born. This can lead to complications, including middle ear disease, feeding problems, hearing loss, speech problems, and psychosocial problems. Cleft lip/palate can be treated successfully with surgery in early childhood.



Junior Seau a former NFL star suffered from Chronic Traumatic Encephalopathy (CTE). He shot himself in the chest presumably so his brain would remain intact for study. CTE is seen primarily in athletes who are subjected to repeated non-lethal blows to

the head (football players and boxers). It is a progressive disease and associated with mood swings, depression, insomnia, and dementia.



Albert Haynesworth

NFL defensive lineman, famously suffered from rhabdomyolysis. He experienced muscle pain while getting back in shape for the season. Rhabdomyolysis is a condition is caused by muscle breakdown that can be caused by a variety of causes including, strenuous exercise, crush injuries, statin use, seizures, and drugs such as cocaine, amphetamines, and PCP. The breakdown of muscle leads to the release of intracellular components including Potassium which can lead to hyperkalemia and myoglobin which can cause acute kidney injury and Creatine Kinase which will be severely elevated in these patients. Treatment should be initiated with aggressive hydration with IV fluids and hyperkalemia should be managed.



Brett Favre former NFL quarterback suffered from turf toe. Metatarsophalangeal joint sprain (aka "turf toe") is associated with playing on rigid terrains such as artificial turf. Injury occurs when a force is applied to a person's calf when

the knee and the toe of the same leg are touching the ground. The toe is hyperextended, causing injury to the joint. This is worse when an athlete is wearing shoes like cleats because the cleats stick into the turf, while the joint itself bends. In addition to rest, ice and anti-inflammatories, athletes may wear a shoe or boot with a rigid sole to limit toe dorsiflexion.

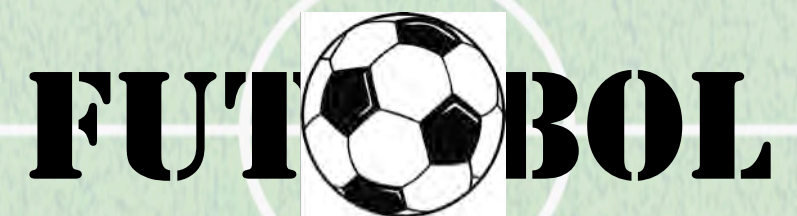


Ryan Clark, a safety for the Pittsburgh Steelers suffered a vaso-occlusive event after the game he played in 2007 requiring a splenectomy and cholecystectomy caused by his known sickle cell trait. Patients with sickle cell trait under normal conditions do not have any hematologic abnormalities. Under conditions of decreased oxygen tension (high altitudes), decreased pH, dehydration, the abnormal sickle hemoglobin can lead to polymerization and vaso-occlusive disease.



Miklos Feher, a former Hungarian international soccer star, died of a sudden cardiac arrest during a soccer match in 2004. He collapsed on the field, and cause of death was arrhythmia due to underlying hypertrophic cardiomyopathy (HCM). HCM is an autosomal

dominant congenital abnormality resulting in ventricular hypertrophy. Specifically, the thickened septum decreases LV filling (diastole) and leads to LV outflow obstruction (systole). This is the number one cause of sudden cardiac death in children and young adults.



Lionel Messi one of the world's best soccer players had childhood onset Growth Hormone (GH) deficiency. He moved to Barcelona to receive GH treatment, which is the preferred management after worrisome causes have been ruled out. He was just over 4 feet tall at age 11, but

currently stands 5'7" because of the replacement therapy.

Growth Hormone deficiency can be diagnosed by physical exam characteristics, but is commonly found on testing showing low IGF or deficiency of GH release on stimulatory tests. An extremely low IGF warrants immediate work up for causes with a brain MRI being the first step to rule out intracranial mass and pituitary mass.

ALL STARS



Luol Deng NBA All Star forward had a lumbar puncture (LP) to rule out viral meningitis during the 2013 NBA playoffs. CSF was normal, however he suffered a post-LP headache due to CSF leak and was unable to play the rest of the series. Viral meningitis CSF has normal to high opening pressure, lymphocyte-predominant WBCs, normal to high protein, normal glucose.



Kobe Bryant NBA All Star suffered from an Achilles tendon injury while playing for the Lakers. He was still able to walk, albeit with a limp, and this injury ended his season. Achilles tendon ruptures are caused by pivoting or jumping. Patients may still be able to walk and dorsiflex/plantar flex the ankle. The Thompson Test (90% sensitive and specific for Achilles tendon rupture) is performed by squeezing the gastrocnemius muscle which should lead to plantar flexion; when it does not, this is positive.



Kareem Abdul-Jabbar NBA all time leading scorer was diagnosed with CML after reporting night sweats and hot flashes. His CML was resistant to first line imatinib (Gleevec), but he achieved molecular response on second line nilotinib (also a TKI). He is now a spokesperson for Novartis, maker of imatinib and nilotinib.



Michael Phelps retired U.S. Olympic swimmer, was diagnosed with ADHD at age 9 and was treated with Ritalin for several years. Treatment of ADHD involves both pharmacologic and non-pharmacologic treatment. Both stimulant and non-stimulant classes of medications can be used to treat ADHD. Ritalin and Adderall are stimulant medications that are commonly used as 1st line treatment for ADHD. Strattera is a non-stimulant medication that is FDA approved in the treatment of ADHD; it acts as a selective norepinephrine reuptake inhibitor.



Zack Greinke, a professional baseball pitcher (for the Angels and the Dodgers), has suffered from social phobia his whole career. Social Phobia refers to fear out of proportion to social situations (i.e. speeches, performances, presentations, conversations in large groups) that impacts one's life. Treatment may include psychotherapy, beta blockers, SSRIs, or benzodiazepines. He still actively plays and receives treatment for the condition.



Martina Navratilova, had ductal carcinoma in situ (DCIS) and was treated by lumpectomy followed by radiation.

Ductal carcinoma is the most common type of breast cancer in women and can either be invasive or in situ. DCIS is noninvasive, but is potentially malignant. It is confined to the lactiferous ducts. DCIS is often found on screening mammography and patients may feel a lump. However DCIS rarely has any symptoms. Treatment for DCIS is lumpectomy +/- radiation.

Phil Mickelson is a famous professional golfer who was diagnosed with psoriatic arthritis as he was preparing for the U.S. Open. Initial treatment for psoriatic arthritis consists on NSAIDs, but persistent pain may require the use of methotrexate and/or biologics such as entecavir.



Charlie Bejian a professional golfer, suffered a series of televised panic attacks during a tournament in 2013. He has since spoken about his experience, offering legitimacy for the condition.

Benzodiazepines, which act on GABA receptors, are a short-term method of controlling panic attacks. However, caution should be used when prescribing benzodiazepines because of their addictive qualities and life-threatening withdrawals. SSRIs and cognitive-behavioral therapy are safer long-term treatment for panic attacks.

VENUS AND SERENA WILLIAMS



Venus Williams, professional women's tennis player, was diagnosed with Sjogren's Syndrome. Her symptoms caused her to have to withdraw from a major competition in 2011.

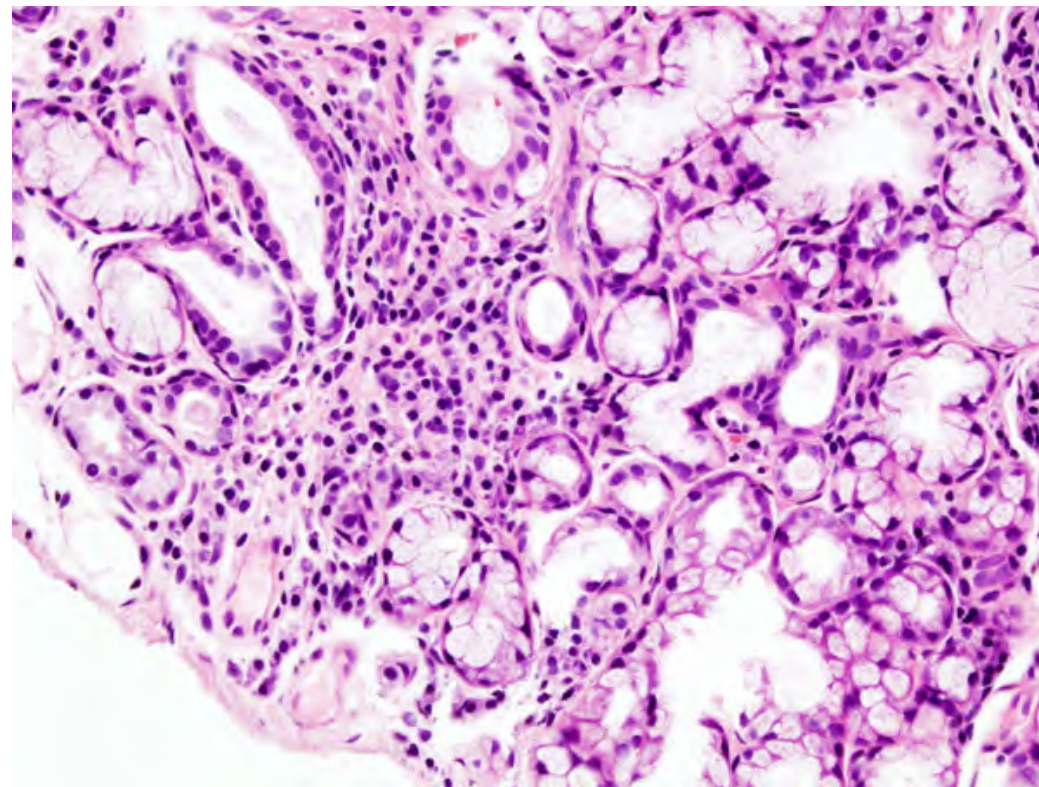
Joint pain, fatigue, dry mouth and dry eyes match the constellation of Sjogren's Syndrome. Greater awareness and understanding is important for patients, their support system, and the medical profession. The average time to diagnosis of the syndrome is now 4.7 years. In 2014, The Sjogren's Syndrome Foundation announced a five-year goal to cut the time to diagnoses in half.

The Wells score:

- clinically suspected **DVT** – 3.0 points
- alternative diagnosis is less likely than PE – 3.0 points
- **tachycardia** (heart rate > 100) – 1.5 points
- immobilization ($\geq 3d$)/surgery in previous four weeks – 1.5 points
- history of **DVT** or PE – 1.5 points
- **hemoptysis** – 1.0 points
- malignancy (with treatment within 6 months) or palliative – 1.0 points

Traditional interpretation

- Score >6.0 – High (probability 59% based on pooled data)
- Score 2.0 to 6.0 – Moderate (probability 29% based on pooled data)
- Score <2.0 – Low (probability 15% based on pooled data)



Focal lymphoid infiltration in the minor salivary gland. These infiltrates predispose Sjogren's patients to MALT



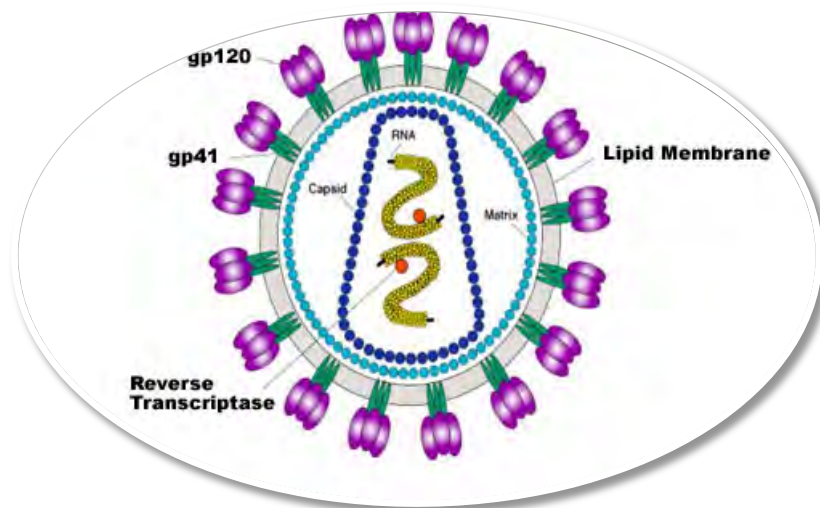
Serena Williams, professional tennis player, admitted in March 2011 that she had suffered from a Pulmonary Embolus. She recovered and returned to competitive tennis.

Ervin "Magic" Johnson

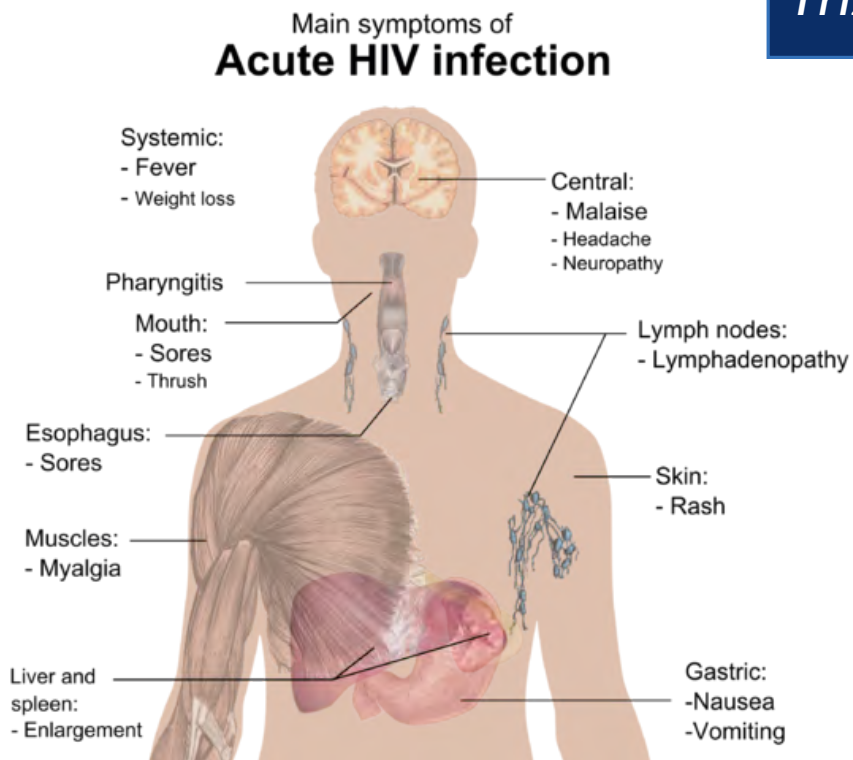
Magic Johnson combats AIDS misperceptions
-USA Today, Dec 1, 2006

Fifteen years ago, L.A. Laker legend Magic Johnson announced he had AIDS and would retire from basketball. Today, Johnson, 47, looks so healthy some may question whether AIDS is the menace it was made out to be.

For the past six years, HIV has been the leading cause of death for blacks 25 to 44 years of age, according to the Kaiser Family Foundation. For whites, HIV is the fifth-leading cause of death; for Hispanics, HIV ranks fourth. Although blacks make up about 15% of the U.S. population, they account for about 50% of all people in the United States who live with HIV. Blacks account for almost half of new HIV diagnoses, a tide that is rising. Two-thirds of new infections among women occur in black women. "We've got to drive these numbers down," Johnson says.



Johnson says he owes his well-being – and quite possibly his life – to the multidrug cocktail he takes everyday. The drugs, GlaxoSmithKline's Trizivir and Abbott's Kaletra, are standard treatments used by many thousands of others infected with the AIDS virus, HIV. Johnson can also credit luck and possibly the conditioning that comes from playing up to 100 heart-pounding NBA games a year. The next three years were difficult ones. Johnson missed being on the court, and the side effects of AZT, the only drug available at the time, made it hard for him to exercise. He suffered "mood swings" as a result of the stresses in his life.



"Johnson says he owes his well-being – and quite possibly his life – to the multidrug cocktail he takes everyday, Trizivir and Kaletra."

Magic Johnson announced to the public that he was HIV positive in 1991. Johnson has since become a spokesperson for GlaxoSmithKline's drug Trizivir, which is a single-pill combination of abacavir, lamivudine and zidovudine. Johnson has also stated publicly that he takes Kaletra, which is a combination of lopinavir and ritonavir.

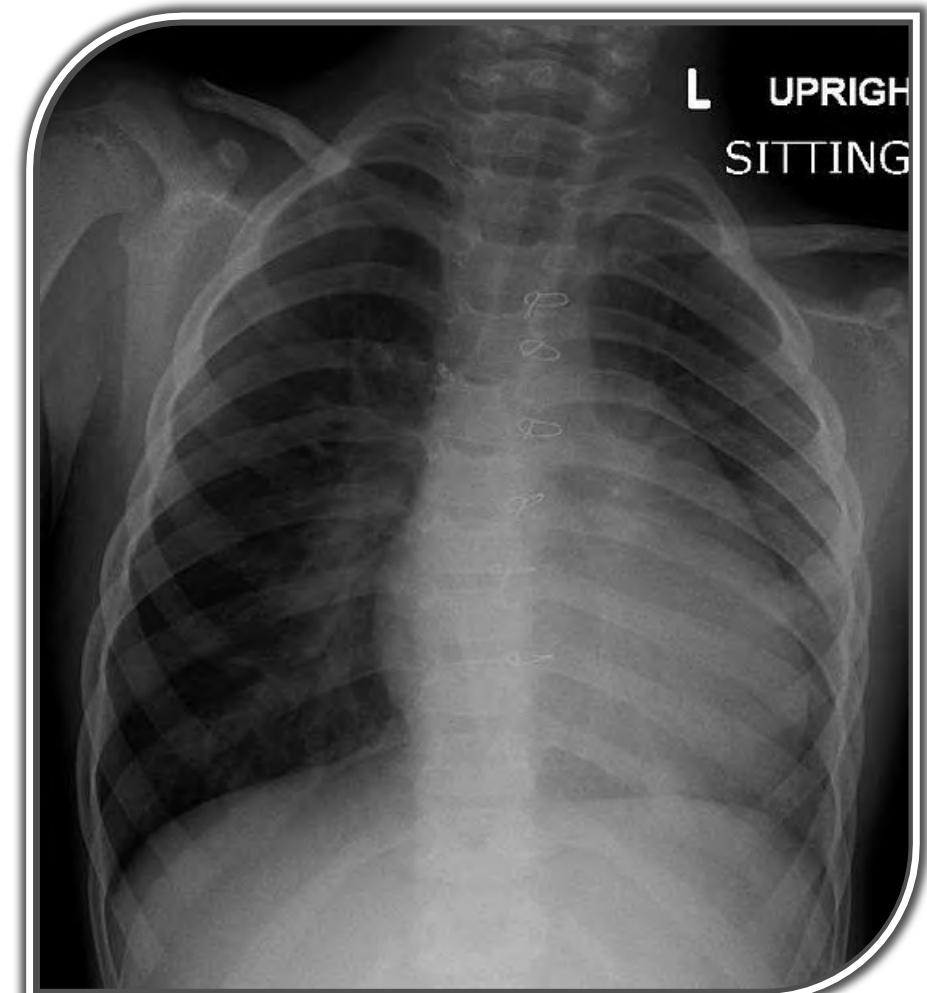
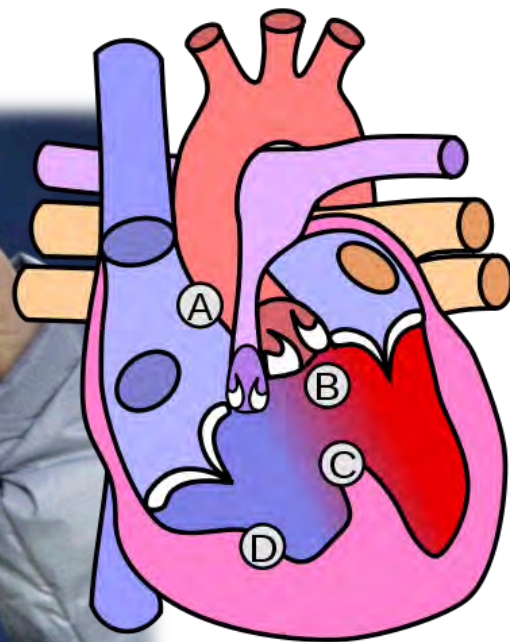
Shaun White

Shaun White on his Tetralogy of Fallot diagnosis:

Olympic snowboarder Shaun White was diagnosed with TOF as an infant, and underwent corrective surgeries as a baby. He has said of his diagnosis, "I had three open heart surgeries when I was born. I had a defect of the heart called Tetralogy of Fallot. Growing up I had certain limitations and had to overcome those and actually become an athlete. I was supposed to have a 'sluggish heart' and not be able to do much, and here I am, I'm a full-on athlete and it's just funny how these things work. It instilled a bit of a fight in me from the very get-go."

<http://www.clickondetroit.com/sports/2014-olympics/shaun-white-shares-childhood-battle-with-heart-defects/24341994>

TOF is the most common cyanotic congenital heart disease. It consists of pulmonary stenosis (A), overriding aorta (B), VSD (C) and RVH (D); see image below. Of these four malformations, the degree of pulmonary stenosis is the primary determinant for the severity of symptoms. TOF typically presents in infancy or early childhood with shortness of breath and fatiguability. By 1-2 years, children begin to experience cyanotic episodes, or "tet spells," that are relieved by squatting. Squatting increases systemic vascular resistance, thus increasing LV pressure and providing a temporary reversal of the right to left shunt.



Severe tet spells can lead to sudden cyanosis and syncope. The emergency management of tet spells includes placing the patient on their side and bringing the patient's knees to their chest, which will increase systemic vascular resistance and decrease the right-to-left shunting, thereby increasing pulmonary blood flow. Administering 100% O₂ is also effective, because oxygen is a potent pulmonary vasodilator and peripheral vasoconstrictor. Pharmacologic interventions include morphine, to reduce ventilatory drive and vasopressors, including epinephrine, norepinephrine or phenylephrine.



"I was supposed to have a 'sluggish heart' and not be able to do much, and here I am, I'm a full-on athlete and it's just funny how these things work. It instilled a bit of a fight in me from the very get-go."

Lance Armstrong is an American former professional road racing cyclist. Armstrong had won the Tour de France a (former) record seven consecutive times between 1999 and 2005 before being disqualified from all those races and banned from competitive cycling for life, for doping offenses by the Union Cycliste Internationale (UCI) in 2012, based on the evidence presented by the United States Anti-Doping Agency (USADA). A cancer survivor, he is the founder of the Livestrong Foundation, originally called the Lance Armstrong Foundation, which provides support for cancer patients.



Chest CT showing pulmonary fibrosis from bleomycin toxicity.

Lance Armstrong

Surviving Cancer

The standard chemotherapeutic regimen for this type of cancer in 1996 was called BEP. The name is short for the drugs Bleomycin, etoposide, and cisplatin (Platinol). This blend made a “cocktail” that was lethal to many kinds of testicular cancer cells. The drugs are too caustic to drip into a vein in a patient’s arm with an IV needle. A catheter was inserted into the middle of Armstrong’s chest to put the drugs into his body. There was a week of daily treatments, then two weeks off before a second cycle of treatments would begin.

The problem with using bleomycin was that it is also very hard on lung cells. Bleomycin could have caused permanent damage to his lung capacity and possibly his heart as well, which would have meant an end to his professional cycling career.

An alternative cocktail was available known as VIP containing Vinblastin, etoposide, ifosfamide, and cisplatin (Platinol).

Lance Armstrong: A Biography
Paula Johanson



“The problem with using bleomycin was that it is also very hard on lung cells...which would have meant an end to his professional cycling career”

Testicular cancer is cancer that develops in the testicles, a part of the male reproductive system. In the United States, between 7,500 and 8,000 diagnoses of testicular cancer are made each year. In the UK, approximately 2,000 men are diagnosed each year, and over his lifetime, a man's risk of testicular cancer is roughly 1 in 200 (0.4%). It is the most common cancer in males aged 20-39 years, the period of peak incidence, and is rarely seen before the age of 15 years. Testicular cancer has one of the highest cure rates of all cancers: If the cancer hasn’t spread outside the testicle, the 5-year relative survival rate is 99%. Even if the cancer has grown into nearby structures or has spread to nearby lymph nodes, the rate is 96%. If it has spread to organs or lymph nodes away from the tumor, the 5-year relative survival rate is around 74%. (metastasized). Even for the relatively few cases in which malignant cancer has spread widely, modern chemotherapy offers a cure rate of at least 80%.

