

BRAIN FLICKS

*A movie guide for the
neuroscientist film buff*

Compliments of The Science Advisory Board



The
Science
Advisory
Board 
www.scienceboard.net



Featured Movies



The SAB staff has compiled this guide to neuroscience-themed movies. Choose a favorite, pop some popcorn, put your feet up and enjoy!

50 First Dates (2004)	<i>Romantic Comedy</i>
A Beautiful Mind (2001)	<i>Drama</i>
As Good as It Gets (1997)	<i>Romantic Comedy</i>
Autism is a World (2005)	<i>Documentary</i>
Awakenings (1990)	<i>Drama</i>
Blade Runner (1982)	<i>Action</i>
Eternal Sunshine of the Spotless Mind (2004)	<i>Drama</i>
Hilary and Jackie (1998)	<i>Drama</i>
Igby Goes Down (2002)	<i>Comedy</i>
Lawnmower Man (1993)	<i>Science Fiction Thriller</i>
Lorenzo's Oil (1992)	<i>Drama</i>
Memento (2000)	<i>Thriller</i>
Mercury Rising (1998)	<i>Action Thriller</i>
Murderball (2005)	<i>Sports Documentary</i>
My Left Foot (1989)	<i>Biography</i>
One Flew over the Cuckoo's Nest (1975)	<i>Drama</i>
Pi (1998)	<i>Thriller</i>
Rain Man (1998)	<i>Drama</i>
Regarding Henry (1991)	<i>Drama</i>
Silence of the Lambs (1991)	<i>Thriller</i>



BRAIN FLICKS



50 First Dates (2004)

Length: 99 minutes



Henry Roth lives in a Hawaiian paradise in the company of endless women with no strings attached—until he meets Lucy Whitmore. Henry and Lucy enjoy the company of each other and the promise of a more serious relationship blossoms. Approaching Lucy the next day, Henry is distressed to find that Lucy doesn't recognize him and Lucy is upset to find a stranger acting as though they are familiar. Lucy's friends pull him aside and explain that Lucy was in a car accident and now suffers from short-term memory loss; each night, her memory of that day is erased and when she wakes up she thinks it's the morning of the accident. Find out how Henry overcomes these obstacles and whether he can win Lucy's heart.

Upon further research, Henry finds that Lucy is experiencing anterograde amnesia and can not store memories created after the injury. Anterograde amnesia is a loss of memory of what happens after the event that caused the amnesia; it is different from retrograde amnesia, where memories prior to the event are forgotten.

A Beautiful Mind (2001)

135 minutes



John Nash is a brilliant mathematician and professor at MIT who falls in love with—and marries—a student named Alicia. Nash is invited to a secret U.S. Department of Defense facility at the Pentagon to crack an enemy encryption and is able to decipher the code mentally. Impressed by his performance, defense agents give Nash another assignment to look for patterns in publications, apparently to thwart a Soviet plot. He is instructed to write reports and submit them to a specified mailbox. Nash becomes paranoid and begins acting erratically, alarming Alicia who informs a psychiatric hospital. Upon evaluation, the two discover that Nash suffers from schizophrenia. John and Alicia team up to overcome his disorder in this true story.

John Nash suffered from paranoid schizophrenia. His symptoms included delusions (such as the assignment to look for patterns for the US Department of Defense), and visual/auditory hallucinations, which included inventing several college friends and the defense agent. Nash was hospitalized on several occasions and given multiple forms of treatment, including insulin shock therapy and antipsychotic medications.



As Good as It Gets (1997)

Length: 139 minutes



Melvin Udall is a successful romance novelist with a foul disposition. Because of his obsessive-compulsive disorder, he insists on a strict daily routine. He eats the same breakfast in the same booth at the same restaurant each day, much to the dismay of his waitress, Carol. He steps over cracks in the sidewalk and turns his key 5 times before locking the door. His world is turned upside down when his neighbor is robbed and Melvin is forced to care for the neighbor's dog, and when Carol's son gets sick and she can no longer serve him breakfast. Melvin is forced to restore order to his life by making some interesting connections and notable changes in his disposition.

Melvin suffered from obsessive-compulsive disorder, or OCD. OCD is a chronic anxiety disorder characterized by obsessions and related compulsions or rituals. The obsessions include recurrent thoughts and impulses, and the compulsions are repetitive behaviors one feels compelled to perform to overcome the obsession. An example of one of Melvin's rituals is turning his key 5 times before he locks his door.

Autism is a World (2005)

Length: 40 minutes



Sue Rubin was considered mentally retarded by others until her early teens, when she began communicating with a computer keyboard. Before Sue was introduced to this type of facilitated communication, IQ tests scored her at a 29; following her diagnosis and successful communication, she received an IQ score of 133. The documentary follows her daily struggles with the disorder and her successful management of autism.

Autism is a brain development disorder characterized by limited social interaction and communication, restricted interests and repetitive behavior. The disorder manifests itself in many different ways, depending on the person. Sue's autism was revealed in her inability to talk, hence the need for facilitated communication.

BRAIN FLICKS



Awakenings (1990)

Length: 121 Minutes



Malcolm Sayer is a hard-working physician who works in a ward of comatose patients that survived an encephalitis lethargica epidemic. Sayer and nurse Eleanor discover that the patients seem to respond to unique stimuli, such as hearing certain music genres. After having a breakthrough with a particularly hard patient to reach, Leonard, Sayer is even more determined to reach his patients. He attends a conference on the L-Dopa drug and its success in treating Parkinson's Disease. After a successful trial run with Leonard, Malcolm and Eleanor treat all of the ward's patients with L-Dopa and are delighted at their "awakenings." The hospital scrambles to take care of what seems like a whole new set of patients, as the patients struggle with the lost period in their life and the confinements of the hospital. Discover what effects the treatment has on the patients and whether it is successful or not. Based on a book by Oliver Sacks.

Encephalitis lethargica (EL) was an illness that swept the world in the 1920's and disappeared quickly. EL attacks the brain, leaving victims speechless and motionless. Patients were given anti-Parkinson's drugs, such as L-Dopa, which produced dramatic, but short-lived, results.

Blade Runner (1982)

Length: 117 Minutes



In 2019, Rick Deckard is a retired blade runner, a police officer that hunts down genetically manufactured beings known as "replicants." Replicants are virtually indistinguishable from humans and serve mankind by working undesirable or dangerous jobs. Deckard is called back into action to "retire" (kill) several replicants that illegally returned to Earth in an attempt to extend their limited 4-year lifespan. Deckard begins hunting down 4, and eventually 5, replicants through a dystopian Los Angeles. When the replicants realize what he's up to, the job becomes far more dangerous. As Deckard continues to track his targets, he learns more about them and begins to form connections, especially with Rachael. As he continues his mission, Deckard gains an appreciation for his own humanity while the audience begins to question if Deckard is a replicant himself!

Blade Runner incorporates multiple themes including morality and artificial intelligence, raising many questions to the audience. Does retiring a replicant have the same moral implications as killing a human if both can think and feel independently? What is it that makes the human mind unique? Artificial Intelligence is used in everyday life from stock trading to medical diagnosis, where is the line drawn?



Eternal Sunshine of the Spotless Mind (2004)

Length: 108 Minutes



Joel Barrish and Clementine Kruczynski meet on a train and are drawn to each other, despite their opposite personalities. Joel and Clementine are former lovers but they don't realize it at the time because they've both had their memories altered. After a nasty fight, Clementine hires a New York firm, Lacuna, to erase all memories of Joel and their relationship.

When Joel discovers this, he is devastated and decides to do the same thing. While unconscious, he decides that he'd like to keep the memories of his love for Clementine, and unsuccessfully tries to rebel as the memories slip away. Around the time that they meet again, a disgruntled Lacuna employee sends all of the clients evidence of their memories. Joel and Clementine receive—and are hurt by—their memories of each other. Can they recover and salvage their relationship or must they part ways?

Lacuna, the name of the firm Joel and Clementine use to erase their memories, means a gap or missing part. Lacunar amnesia is a gap in one's memory about a specific event. The brain is designed to preserve emotionally strong memories and even amnesics, during the right circumstances, can remember their feelings about something. This explains why Joel and Clemintine were drawn to each other on the train they rode so frequently together.

Hilary and Jackie (1998)

Length: 121 minutes



Hilary and Jackie are sisters who learn music together, Hilary the flute and Jackie the cello. Once Jackie takes practice seriously, she rises quickly to international fame, marrying a pianist and conductor. Hilary continues with her music, but chooses a more normal life, joining a community orchestra and marrying the son of a composer. The film focuses on the relationship between the two sisters and their dedication to each other, taking drastic measures to help Jackie when she has a nervous breakdown.

The sisters cling together in an effort to fight multiple sclerosis and its ravaging effects.

Multiple Sclerosis (MS) is an autoimmune disease in which the immune system attacks the central nervous system, eventually leading to demyelination. MS affects areas of the brain and spinal cord. Jackie loses control of her nervous system, becomes paralyzed, goes mute and deaf, and eventually dies. The cause has yet to be identified and there is no known cure for MS.



BRAIN FLICKS



Igby Goes Down (2002)

Length: 97 Minutes



Igby Slocumb, a 17 year old misfit, is oppressed by his east coast “old money” family, having to deal with his father’s schizophrenia and his mother’s cancer. He happily flunks out of several prep schools before running away. Igby finds comfort in the bohemian underworld of Manhattan and the arms of older women, specifically Sookie. After finding that Sookie also romances Oliver, Igby’s older brother, he is determined to keep his life in a downward cycle and he begins dealing heroin. Find out if the family is able to rally together and face their problems as one or if they are divided forever.

Schizophrenia is a mental illness characterized by irregularities in the perception of reality. Schizophrenia is also accompanied by other disorders, such as extreme depression and anxiety. Igby’s father suffers from depression, attempts suicide and goes to mental hospital. Schizophrenia greatly affects the family of the person with the disorder. Family members often feel overlooked, hence Igby’s behavior.

Lawnmower Man (1993)

Length: 107 Minutes



Dr. Lance Angelo has been using virtual reality to work on improving one’s intelligence. He meets a retarded gardener named Jobe Smith and Angelo feels like his work could help the gardener improve his intelligence. Jobe happily agrees and the treatment begins, using nootropic drugs, cortex stimulation and virtual reality. As Jobe becomes smarter, Dr. Angelo begins taking him to the lab to use the technology there. Jobe’s intelligence and abilities continue to improve and he decides to get revenge on those who exploited him before he was smart. Jobe finds an interesting way to seek his retribution. Based on a short story by Stephen King.

Nootropics, the drugs Jobe takes as part of his treatment, are a class of drugs used to improve impaired human brain capacities. With the help of nootropic drugs, and Jobe’s other treatments, Dr. Angelo is able to improve brain function by reorganizing neural pathways. In addition to developing intelligence and telekinetic abilities, this movie explores potential pitfalls of direct nervous-system manipulation, including over-stimulation leading to catatonic states.



Lorenzo's Oil (1992)

Length: 129 Minutes



Lorenzo Odone is a happy healthy little boy until strange things start happening to him—blackouts, memory lapses and other strange mental phenomena. After taking him to multiple doctors who puzzle over his symptoms, parents Augusto and Michaela set out to find a treatment themselves. As Lorenzo's health declines, they pour over medical texts, question top doctors and set up an international symposium about the disease, adrenoleukodystrophy (ALD). During their search they discover a certain type of oil to add to their son's diet, and they find a chemist who will formulate the mixture. Adding the oil to Lorenzo's diet produces some exciting results. Based on a true story.

ALD is a disorder that progressively damages the myelin casing of the nerves. The special oil the Odone's discovered, Lorenzo's Oil, is still being studied. The mixture of glycerol trioleate and glycerol trierucate acts to normalize the accumulation of long-chain fatty-acids in the brain. Lorenzo Odone died in May 2008 at the age of 30 from pneumonia, 20 years longer than doctors predicted.

Memento (2000)

Length: 113 Minutes



Leonard Shelby and his wife are brutally attacked during a robbery in which his wife dies, and Leonard suffers a blow to the head leaving him with short-term memory loss. Leonard wants revenge and is determined to track down his wife's killer. However, his memory of each day is erased when he goes to sleep so he is forced to write notes to himself, take Polaroid pictures and tattoo important facts on his body. One of the clues he leaves himself is the killer's name. A caller named Teddy, claiming to be a police officer, tells Leonard the killer is a drug dealer, and where to find him, all of which is a lie. Leonard realizes he's been tricked and comes up with a plan to trick himself.

Following the blow to the head during the robbery, Leonard suffered from anterograde amnesia, able to remember what happened up to the trauma but unable to store any new memories. He was able to trick himself into killing Teddy because he left a note saying Teddy was the killer, knowing he would wake up the next day and not remember tricking himself.



BRAIN FLICKS



Mercury Rising (1998)

Length: 108 Minutes



The National Security Agency (NSA) creates what they believe to be an undecipherable code called Mercury. They run a test to see if anyone or anything can break the code and receive a phone call from an autistic boy named Simon Lynch. Seeing this as a liability since the code holds some high priority secrets, an agent is sent to kill Simon and his family.

After arriving and killing the parents, the agent is unable to find Simon and leaves at the sound of approaching sirens. Art Jeffries, an undercover FBI agent arrives, finds Simon hiding in a trap door in his closet. Jeffries and Simon go on the run to escape from the NSA; Jeffries finds it difficult to question and even protect Simon because of the autism. No one at the FBI believes that Simon is in any danger and Jeffries is soon portrayed as a kidnapper. Can Jeffries save Simon and clear his name?

Autism, a brain development disorder, is often separated into 3 categories, low-, medium- and high-functioning autism based on IQ levels. Those with high-functioning autism have a high IQ. We can assume that Simon has high-functioning autism based on the fact that he was able to decipher a code that not even the world's best computers could decipher.

Murderball (2005)

Length: 88 Minutes



Murderball is a type of full contact rugby played by quadriplegics in specially made wheelchairs. The movie centers on the rivalry between the US and Canadian teams leading up to the 2004 Paralympic Games in Athens, Greece. Personal stories of the players unfold explaining their injuries—mostly spinal cord, feelings in public, competitiveness and their love of the game.

Spinal Cord injuries damage the myelinated fiber tracks of the spinal cord that carry sensory and motor signals from the brain to the rest of the body. The level of functionality depends on where in the spinal cord the injury occurred; the higher up on the spinal cord, the more of the person's body that will be affected.



My Left Foot (1989)

Length: 103 Minutes



Christy Brown is an Irishman born with Cerebral Palsy. Everyone but his mother believed him to be mentally retarded. Only able to move his left foot, he scrawls a one-word message on the floor for his mother with a piece of chalk. The movie chronicles his struggle with alcoholism, everyday tasks and his love life. Based on his autobiography.

Cerebral Palsy (CP) is caused by damage to the motor center of the brain during pregnancy and there is no known cure. Christy Brown had severe double-athetoid CP. He was treated at a specialist center in London and promised to stop using his left foot because of the contorted position it put the rest of his body in. His siblings initially transcribed his autobiography for him.

One Flew over the Cuckoo's Nest (1975)

Length: 133 Minutes



Randall McMurphy is serving a prison term on a work farm for rape, but after exhibiting deranged behavior, he is transferred to a mental institution. His ward is run by an unyielding tyrant, Nurse Ratched, who has scared her ward charges into submission; she sees McMurphy as a challenge to her authority. McMurphy gradually wins friendships with a group of men in his effort to free them of Nurse Ratched. "Chief" Bromden is Randall's closest confidante, an enormous Native American. McMurphy decides the ward needs a little fun and when Nurse Ratched leaves one evening, he invites his girlfriend Candy to bring booze and another girl to entertain them. When Nurse Ratched returns in the morning, she finds her charges passed out on the floor and punishes everyone. Randall is most severely punished, given a lobotomy, causing the Chief to lash out.

The lobotomy is a form of psychosurgery that results in major personality changes and mental disabilities. They were used in the 20th century as a form of treatment for various mental illnesses. Randall's lobotomy was described as a brutal frontal-lobe castration and was ordered following his violent reaction to Nurse Ratched's punishment of everyone.



Pi (1998)

Length: 88 Minutes



Maximillian Cohen is a mathematical genius and theorizes that everything in nature can be understood using numbers. He was plagued by severe headaches starting at a young age, often causing him to pass out and driving him to the brink of madness. Max is working on analyzing the patterns created by data from the stock market using the computer he built, Euclid. In the middle of making stock picks, Euclid crashes and spits out a 216-digit printout. Angrily he throws away the paper and can't find it when he realizes the predictions Euclid made before crashing were correct. Max's mentor urges him to be careful, indicating that he encountered that number years ago and feels like it has powers of its own; it caused a heart attack. Max begins working with Lenny who does mathematical research on the Torah. Both stock market connections and Lenny begin to make demands on Max for the number. Max goes to visit his mentor who has since died from a second heart attack. He has a vision of the 216-digit number; he feels like the number and his headaches are connected. Max reacts violently to protect himself from the number and to prevent any further connection.

Asperger's syndrome is an autism spectrum disorder that is associated with higher than average math abilities. Most people with the disorder have uneven abilities. Max was a brilliant mathematician but socially awkward, and has little interaction with people except his mentor and Lenny.

Rain Man (1998)

Length: 133 Minutes



Charlie Babbitt is a Los Angeles car dealer who learns that his estranged father has died. When Charlie goes to settle the estate, he finds \$3 million dollars bequeathed to an unnamed beneficiary. After a little research, Charlie learns that the funds are going to a mental institution that houses an autistic savant brother he didn't know he had. Charlie takes Raymond, his brother, back to LA to fight for part of the money. During the trip, Charlie gets to know Raymond and feel protective of him. When he finally meets with attorneys, instead of getting his share of the money, Charlie considers taking custody of Raymond. The two brothers settle things differently than either of them had planned.

Raymond is an autistic savant, a rare condition in which a person with autism has one or more areas of brilliance compared to their overall limitations. Raymond has an excellent memory, and Charlie takes Raymond to Las Vegas to play blackjack.



Regarding Henry (1991)

Length: 108 Minutes



Henry Turner is a successful Manhattan litigator with little time for his family. One night at a convenience store, he encounters a robbery and gets shot in the head resulting in brain damage. Initially, Henry cannot move, talk or remember anyone. Through physical therapy, Henry is able to walk and talk again, and returns home to find that he doesn't like the person he used to be. He doesn't like his clothes, his friends, or his job. He can't bring himself to be the ruthless lawyer he was, and his firm gradually reduces his workload until he is just doing busy work. He falls back on the support of his wife and daughter but is upset to find that both he and his wife were having affairs before the accident. The old Henry wouldn't have cared, and would have proceeded as though everything was fine. However, the new Henry is a different man.

The bullet hit Henry in his right frontal lobe, which controls behavior and restraint. Following the accident, Henry enjoys spending time with his family, something he didn't enjoy before the injury. The frontal lobe also plays a role in remembering emotion-based memories, which is how Henry forgot about his affair.

Silence of the Lambs (1991)

Length: 118 Minutes



Clarice Starling is a promising young FBI trainee assigned to the case of Buffalo Bill, a serial killer targeting large women. She interviews Hannibal Lector, a brilliant forensic psychiatrist incarcerated for his cannibalism, who formerly treated Buffalo Bill. After Starling's many failed attempts at 'dissecting' him, Lector takes a liking to Starling and begins providing clues that help her track down Buffalo Bill. As more victims are taken, Lector pumps Clarice for childhood stories. Clarice relents and in exchange, Lector gives her the case files he has on Buffalo Bill, saying they contain all she needs to catch him. He escapes from his cell and eludes the police, calling later to say he's having a friend for dinner. Meanwhile, Clarice pores over the files and makes some startling discoveries that endanger her own life.

Serial killing is based on psychological gratification; there is often a sexual element to the murders. In this case, Johns Hopkins turned down Buffalo Bill for a sex change operation and he was sewing himself a woman suit made out of his victims.

The majority of the content for this movie guide was obtained through Internet research at The Internet Movie Database (<http://www.imdb.com/>) and Wikipedia (<http://www.wikipedia.org/>).

About The Science Advisory Board



The Science Advisory Board is an international community of more than 40,000 life science and medical professionals. Board members convene electronically to participate in online conferences, surveys, and discussions addressing issues of importance to life science or medicine. The goal of The Science Advisory Board is to give scientists a prominent voice in expressing opinions, tracking trends and sharing ideas about their fields of research or clinical specialty.

Interested in participating in studies about your own profession? Voice your views on the technologies transforming science and medicine by joining today. Individually, it is often hard for one person's opinion to make a difference, but collectively through our online Board, it is possible to exert tremendous influence. The power of the Internet provides a medium for communicating with life science suppliers about their products on a scale that has never before been possible.

Please register at www.scienceboard.net/register. Membership is completely *free*. In fact, your contributions will be acknowledged through various forms of compensation, including a reward points program that can be redeemed for various gifts and drawings for cash and other prizes.

