

The Lunar effect: Moon Madness

Watch the video here: <https://www.youtube.com/watch?v=jZt5DmE7gEk>

Play the kahoot quiz:
<https://play.kahoot.it/v2/?quizId=9965f4aa-a005-42f7-bf5d-e4b780cdc5f2>



For many **centuries**, people across the world have believed that the moon can be the source of **intermittent insanity**. This belief is so **entrenched**, that it has even given rise to the word “**Lunatic**”, which is derived from the Latin word “Luna”, meaning “Moon”.



A study done by the *University of New Orleans* in 1995, showed that police officers and hospital workers were among the strongest believers that more crime and **trauma** occurred on nights when the moon was full. **Numerous** other studies have been **conducted** around the world, which seem to support this:

- The *University of Washington* did a study in 1978 concluding that out of 11,613 cases of aggravated **assault** in a 5 year period, assaults occurred more often around the full moon, and 34,318 crimes in a year-long period also showed that crimes occurred more **frequently** during the full moon.

- According to the *Daily Mail*, **informal** research done by the Sussex Police in 2007 concluded that there was indeed a rise in violent crimes committed during the full moon.
- Interestingly enough, New Zealand's Justice Minister, Annette King, supported the link between the moon and crime after a spike in violence in January 2008, which could have been caused by the 'lunar effect'.

The Guardian reported that police have linked full moons to a rise in **aggressive behaviour** among drinkers on the streets of Brighton.

*'Senior officers have decided to **deploy** more police this summer to **counter** trouble they believe is linked to the lunar cycle. Research carried out by us has shown a **correlation** between violent **incidents** and full moons.'*

Inspector Andy Parr told the *Brighton Argus* evening paper he would be interested in discussing the police **findings** with academics. He said: "I compared a graph of full moons and a graph of last year's violent crimes and there is a **trend**. People tend to be more **aggressive**."



So could there be some truth to the effect of the moon on human behaviour? Is crime really higher during a full moon? Or is it simply our imagination, brought to life by an **innate** fear of predatory beasts, stalking the **moonlit** night?

Maybe so. To quote Neurology Professor Mark Quigg, "once you are in the medical field, there is the constant **bemoaning** that everything happens on a full moon," which includes crime and suicides. Some doctors can **attest** to that, as well as the police – and maybe even a few bartenders.

According to Michael Zimecki's 2006 study, researchers examined the incidence of crimes reported to 3 police stations in different towns in Europe during the period of 1978-1982. This study showed that the **incidence** of crimes committed on full-moon days was much higher than on all other days. The author concluded that the increased percentage of crimes and suicides on full moon days may be due to "human tidal waves" caused by the **gravitational pull** of the moon.

In a study led by Dr. Christian Cajochen of the *University of Basel's* Psychiatric hospital, 33 volunteers participated to find about the light effects of the moon as it impacts our ability to get a good night's sleep. The researchers found that it took 5 minutes longer for the volunteers to fall asleep when there was a full moon, with 30% less time in deep sleep, and 20 minutes less sleep overall.

Miami psychiatrist Arnold Leiber (1978), in his book, *The Lunar Effect*, **proposed** that the moon was linked to human behaviour by **adversely** affecting their mental and emotional ability by raising physiological **disruptive** "biological tides" in the body akin to the tides it raises in the earth's ocean.

Other researchers **speculate** that the human hormone **cycle** may be directly related to lunar **cycles**. It seems strange that human hormones seem to reach a peak for a few days every month (the word

'month' itself is derived from the word 'moon'). Perhaps this spike in hormones was originally timed to **coincide** with the full moon, over hundreds of thousands of years of evolution?

But what possible evolutionary benefit could humans have from having a hormonal spike during a full moon?

Well, the extra spike in **adrenaline** –the chemical that allows us to fight or flee from danger- may have protected us from predators, such as lions or wolves, which tend to be far more active during the full moon. This may have given humans an added edge when it came to running from danger, or defending themselves from it.

In a world before streetlights, the best nights for human to hunt would have been during the full moon; when the night is at its brightest. Because of this, having a higher level of **adrenaline** during this period could have helped to ensure humans were able to hunt animals successfully.

Perhaps this is where the legends of werewolves and monsters -stalking the countryside on full moon nights- **originated** from; an innate fear of predators, or perhaps the **increased likelihood** for humans themselves to act violently during the full moon.

Whatever the answer may be, take care of yourself next time you're out during the full moon.

Vocabulary

Century - *noun* a period of 100 years

Intermittent - *adj.* stopping and starting at irregular intervals; stopping and starting at regular intervals

Insanity - *noun* relatively permanent disorder of the mind

Entrenched - *adj.* established firmly and securely; dug in

Lunatic - *adj.* insane and believed to be affected by the phases of the moon; *noun* an insane person; a reckless impetuous irresponsible person

Trauma - *noun* an emotional wound or shock often having long-lasting effects; any physical damage to the body caused by violence or accident or fracture etc.

Numerous - *adj.* amounting to a large indefinite number

Conduct - *noun* manner of acting or controlling yourself; (behavioral attributes) the way a person behaves toward other people; *verb* lead, as in the performance of a composition; lead musicians in the performance of; transmit or serve as the medium for transmission; direct the course of; manage or control; take somebody somewhere; behave in a certain manner

Assault - *noun* a threatened or attempted physical attack by someone who appears to be able to cause bodily harm if not stopped; close fighting during the culmination of a military attack; thoroughbred that won the triple crown in 1946; the crime of forcing a woman to submit to sexual intercourse against her will; *verb* attack in speech or writing; attack someone physically or emotionally; force (someone) to have sex against their will

Frequently - *adv.* many times at short intervals

Informal - *adj.* not formal; used of spoken and written language; not officially recognized or controlled; having or fostering a warm or friendly and informal atmosphere

Aggressive - *adj.* having or showing determination and energetic pursuit of your ends; characteristic of an enemy or one eager to fight; tending to spread quickly

Behaviour - *noun* manner of acting or controlling yourself; (psychology) the aggregate of the responses or reactions or movements made by an organism in any situation; (behavioral attributes) the way a person behaves toward other people; the action or reaction of something (as a machine or substance) under specified circumstances

Deploy - *verb* place troops or weapons in battle formation; to distribute systematically or strategically

Counter - *adj.* indicating opposition or resistance; *adv.* in the opposite direction; *noun* table consisting of a horizontal surface over which business is transacted; a calculator that keeps a record of the number of times something happens; a piece of leather forming the back of a shoe or boot; game equipment used in various card or board games; (computer science) a register whose contents go through a regular series of states (usually states indicating consecutive integers); a person who counts things; a return punch (especially by a boxer); a piece of furniture that stands at the side of a dining room; has shelves and drawers; a quick reply to a question or remark (especially a witty or critical one); *verb* speak in response; act in advance of; deal with ahead of time

Correlation - *noun* a statistical relation between two or more variables such that systematic changes in the value of one variable are accompanied by systematic changes in the other; a reciprocal relation between two or more things; a statistic representing how closely two variables co-vary; it can vary from -1 (perfect negative correlation) through 0 (no correlation) to +1 (perfect positive correlation)

Incident - *adj.* falling or striking of light rays on something; (sometimes followed by 'to') minor or casual or subordinate in significance or nature or occurring as a chance concomitant or consequence; *noun* a single distinct event; a public disturbance

Findings - *noun* a collection of tools and other articles used by an artisan to make jewelry or clothing or shoes

Trend - *noun* the popular taste at a given time; a general tendency to change (as of opinion); general line of orientation; a general direction in which something tends to move; *verb* turn sharply; change direction abruptly

Innate - *adj.* present at birth but not necessarily hereditary; acquired during fetal development; being talented through inherited qualities; not established by conditioning or learning

Moonlit - *adj.* lighted by moonlight

Bemoan - *verb* regret strongly

Attest - *verb* authenticate, affirm to be true, genuine, or correct, as in an official capacity; establish or verify the usage of; provide evidence for; stand as proof of; show by one's behavior, attitude, or external attributes; give

testimony in a court of law

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Gravitational - *adj.* of or relating to or caused by gravitation

pull - *noun* the act of pulling; applying force to move something toward or with you; a sustained effort; a device used for pulling something; special advantage or influence; the force used in pulling; a slow inhalation (as of tobacco smoke); a sharp strain on muscles or ligaments; *verb* strain abnormally; take away; hit in the direction that the player is facing when carrying through the swing; cause to move by pulling; apply force so as to cause motion towards the source of the motion; rein in to keep from winning a race; operate when rowing a boat; steer into a certain direction; move into a certain direction; cause to move in a certain direction by exerting a force upon, either physically or in an abstract sense; take sides with; align oneself with; show strong sympathy for; remove, usually with some force or effort; also used in an abstract sense; strip of feathers; direct toward itself or oneself by means of some psychological power or physical attributes; tear or be torn violently; bring, take, or pull out of a container or from under a cover; perform an act, usually with a negative connotation

Proposed - *adj.* planned for the future

Adversely - *adv.* in an adverse manner

Disruptive - *adj.* characterized by unrest or disorder or insubordination

Speculate - *verb* to believe especially on uncertain or tentative grounds; talk over conjecturally, or review in an idle or casual way and with an element of doubt or without sufficient reason to reach a conclusion; invest at a risk; reflect deeply on a subject

Cycle - *noun* a single complete execution of a periodically repeated phenomenon; a periodically repeated sequence of events; a series of poems or songs on the same theme; an interval during which a recurring sequence of events occurs; a wheeled vehicle that has two wheels and is moved by foot pedals; the unit of frequency; one hertz has a periodic interval of one second; *verb* recur in repeating sequences; pass through a cycle; cause to go through a recurring sequence; ride a bicycle; ride a motorcycle

Coincide - *verb* be the same; go with, fall together; happen simultaneously

Adrenaline - *noun* a catecholamine secreted by the adrenal medulla in response to stress (trade name Adrenalin); stimulates autonomic nerve action

Originate - *verb* bring into being; come into existence; take on form or shape; begin a trip at a certain point, as of a plane, train, bus, etc.

Increased - *adj.* made greater in size or amount or degree

likelihood - *noun* the probability of a specified outcome

Questions

Where does the word 'Lunatic' come from?

According to the study done by the *University of New Orleans* in 1995, what do police officers and workers believe?

What did Neurology Professor Mark Quigg say?

What did Michael Zimecki's 2006 study show?

How many people participated in the study led by Dr. Christian Cajochen?

What did the study by Dr. Christian Cajochen show?

Do you believe that crime is higher during the full moon? Why?

Paraphrasing

Rewrite the following sentences in your own words, but make sure the meaning remains the same:

- For many **centuries**, people across the world have believed that the moon can be the source of **intermittent insanity**.

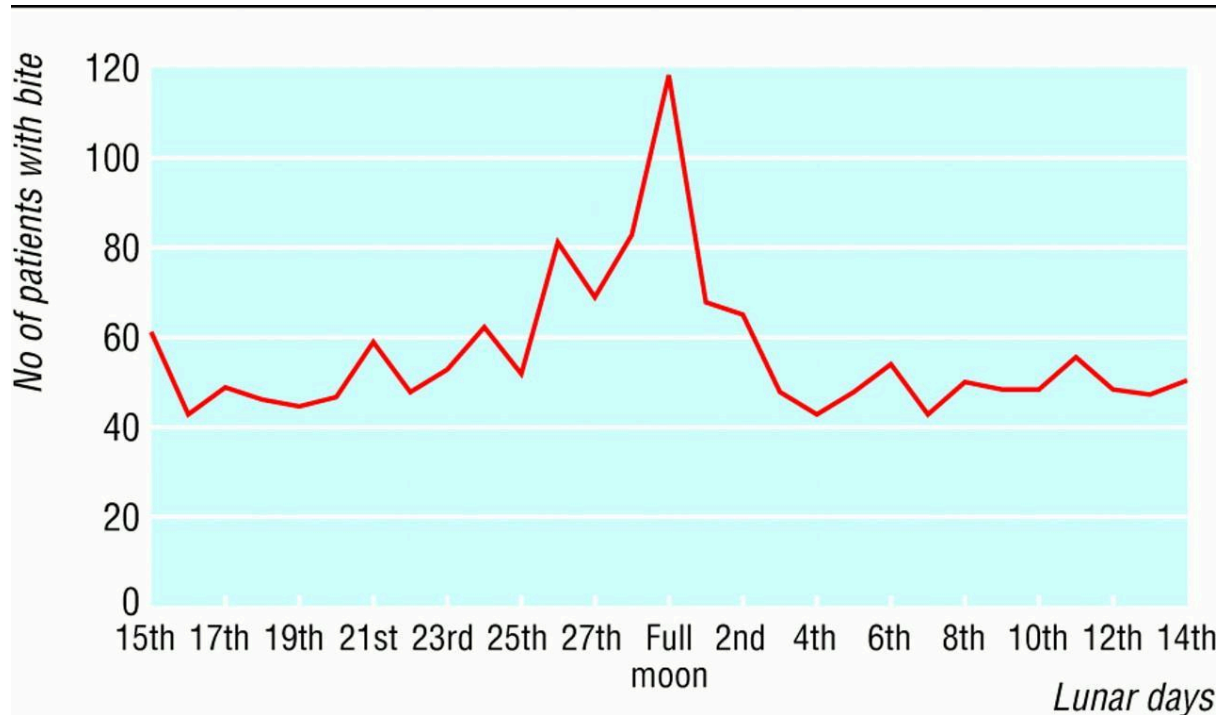
- **Numerous** other studies have been **conducted** around the world, which seem to support this:

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Data analysis of graphs

The graph below shows the number of patients admitted to hospital suffering from bites from animals, over the period of a month.



At what point are the number of patients with bites at their *lowest*?

At what point are the number of patients with bites at their *highest*?

What does the graph show overall?

Facts about the Moon, the Earth and the Sun

Moon:

- The Moon is a natural satellite of the Earth, a celestial body that orbits a planet.
- It is the 5th largest natural satellite in the Solar System.
- It is the quarter of Earth's diameter and $\frac{1}{81}$ of Earth's Mass.

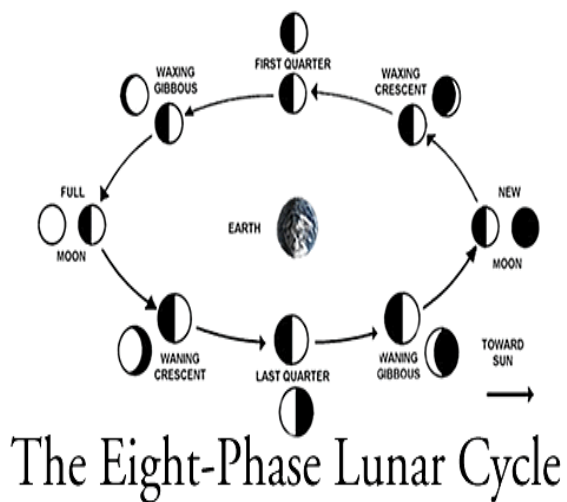
Motions of the Moon:

- Orbits and rotates at the same speed.
- The same side of the moon *always* faces Earth.

Sun, Earth, and Moon:

- The moon reflects the light of the sun; it does NOT make its own light.
- It takes 29.5 days (approximately one month) to go around the Earth in its orbit.

The Phases of the Moon



Describe the lunar cycle in your own words:
