

THE ORIGIN OF “SATURDAY NIGHT PALSYP”?

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Received, October 10, 2001.

Accepted, February 20, 2002.

THE TERM *Saturday night palsy* has become synonymous with radial nerve compression in the arm resulting from direct pressure against a firm object. It typically follows deep sleep on the arm, often after alcohol intoxication. The commonly accepted origin of the phrase is the association of Saturday night with carousing. We offer an alternate explanation: we think that the term *Saturday night palsy* was introduced mistakenly as a simplification of *saturnine palsy* (much like the way the word *palsy* was shortened from *paralysis*). Saturnine palsy, which is a relatively common complication of lead poisoning, has the same clinical presentation of radial nerve compression, and *Saturday night palsy* even sounds like *saturnine palsy*. Moreover, Saturday, lead, carousing, and alcohol are associated with each other through their connection to *Saturn*, the Roman god of agriculture, which encourages the association of the two syndromes with one another.

KEY WORDS: Etymology, Lead poisoning, Radial nerve, Saturday night palsy, Saturnine palsy, Sleep palsy

Neurosurgery 51:737-741, 2002

DOI: 10.1227/01.NEU.0000023989.72999.40

www.neurosurgery-online.com

Whereas fanciful names have been used to characterize various peripheral nerve paralyses, most are straightforward in their origin. In general, they provide information related to the mechanism of the injury, and some reflect subtle humor. Examples include *honeymooner's palsy* (involving the radial nerve in the arm), *handcuff neuropathy* (involving the superficial radial nerve near the radial styloid), and *berry picker's palsy* (involving the peroneal nerve at the fibular neck). Perhaps the best known is *Saturday night palsy*, but is the derivation of this term as obvious as it seems?

SATURDAY NIGHT PALSYP LINKED TO CAROUSING AND ALCOHOL: THE POPULAR DERIVATION

The phrase *Saturday night palsy* is familiar to most physicians as a term describing a condition that arises from prolonged pressure on the radial nerve at the midhumeral level (i.e., spiral groove). It is the most common cause of radial nerve lesions (24). Classically, patients present with a motor deficit such as a wrist, finger, and thumb drop. Fortunately, symptoms usually resolve within 6 months (16). Typically, the extrinsic compression results from unphysiological deep sleep with one arm resting against a firm edge (e.g., park bench,

table, chair) and causes a local conduction block (a neurapractic nerve lesion). This type of sleep position is often associated with the effects of alcohol (perhaps alcoholics may even be predisposed to develop this neuritis) or coma. Synonyms are *sleep palsy*, *honeymooner's palsy*, *lovers' palsy*, *park bench palsy*, and *drunkard's palsy*. On the surface, the derivation of *Saturday night palsy* seems straightforward enough: the paralysis associated with Saturday night (the emotional climax of the week), the time for carousing and alcohol (12b). Perhaps this term was instituted in celebration of the end of a 6-day workweek:

The evening of the last day of the week was always celebrated by what is styled on board of English vessels, “the Saturday-night bottles.” Two of these were sent down into the forecandle, just after dark. (14, p 49) . . . Saturday night drunkenness. . . (20, p 121)

This Saturday night revelry led to another medical term for an alcohol-related syndrome, *Saturday night retinopathy* (i.e., unilateral retinal ischemia that results from prolonged orbital pressure) (12), one for a case of amyloid nitrite abuse, *Saturday night blue*, resulting from methemoglobinemia (21a), as well as one for an ecstasy-related syndrome, *Saturday night fever* (i.e., increased temperature resulting from sympathetic hyperactivity caused by the use of this illegal drug that contains mainly methylenedioxymethamphetamine, or

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“MDMA”) (30). In addition, generic terms such as *Saturday night special* have been introduced. *Saturday night palsy* also describes more broadly other compression neuropathies, such as the deep branch of the radial nerve (6) and the sciatic nerve (12a, 28). The term has taken on an international flavor and has been translated directly into languages as diverse as French, Hebrew (13), and Japanese. The term *Saturday night palsy* has even been accepted into modern-day parlance by nonphysicians, as evidenced by a 1988 rap song titled “Help! I’ve got Saturday Night Palsy!” which describes the ill effects of alcohol.

SATURDAY NIGHT PALSYP LINKED TO LEAD, CAROUSING, AND ALCOHOL: AN ALTERNATE DERIVATION

Potmen, who drink beer which has rested for sometime in pewter vessels, are also the occasional victims of saturnine poisoning. (23, p 278/1)

The name *Saturday*, the seventh day of the week, or *Sater-nesday*, is derived from the Latin *Saturni dies* (“the day of Saturn”). For centuries, lead was known as the metal of Saturn, as is evident in terms such as *salt of Saturn* (lead acetate) and *Saturn red* (red lead):

You shall find the water to have contracted no saturnine impression. (21, p 7)

Here pleas’d behold her mighty wings outspread To hatch a new Saturnian age of Lead (19, p 28)

Because the sweet taste of lead (*saturnine breath* means sweet breath) is attractive to wine drinkers and gourmards, Saturn’s day and Saturn’s metal have throughout history hosted a deadly soiree, with alcohol as their agent. Drinking vessels in Ancient Rome were made of lead. Romans typically chewed into these vessels as they drank, and the saturnine metal, as we will see, remained highly popular among drinkers long after its morbid effects were well known. Thus, Saturday night is directly related to Saturn and his lead, carousing, alcohol, and chronic disease.

In mythology, Saturn was the Roman god of agriculture (Figs. 1 and 2) and the father of Jupiter, Ceres, Juno, and other deities. Romans later identified Saturn with the Greek god Cronos (Figs. 3 and 4). His reign was regarded as the Golden Age, a time of peace, prosperity, and happiness, and his festival, the Saturnalia, was a time of feasting, merriment, gift giving, drinking, and overindulgence that gave rise to the general term *saturnalis* (of Saturn) for unrestrained, often licentious celebration, merrymaking, orgy, excess, and extravagance. The Saturnalia in Ancient Rome was observed on December 17, after the autumn sowing, at Saturn’s temple on the Forum Romanum. Originally, the Saturnalia lasted only 1 day, but it was later extended to 7 days. The festival lasted until the end of paganism, but the 4th-century decision to celebrate Christ’s birthday on December 25 gave the Saturnalia an ironic immortality of its own.



FIGURE 1. *Saturn, the Roman god of agriculture.*

LEAD POISONING AND SATURNINE PALSYP

Lead poisoning has been quite common at a number of points in history for at least the past 5000 years. For example, lead poisoning, or plumbism, caused by lead pipes and food or alcohol preparation was pandemic in Ancient Rome. In fact, some historians have linked the decline of Rome to lead poisoning. Medieval episodes of colic were manifestations of lead poisoning from many sources. Lead poisoning as a result of drinking wine tainted with lead, especially “fortified” port wine, played a significant role in chronic and disabling disease among wealthy and influential people in 18th- and 19th-century Europe. In the 20th century, lead poisoning resulted from occupational or environmental factors, including workers’ exposure to lead, children’s exposure to lead paint (by

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ingestion because of pica), drinkers of moonshine (often made with pipes and coils with lead connections or sweetened with lead acetate ["scrap iron"]), or even those exposed to leaded gasoline.

Even today, lead poisoning unfortunately remains a public health problem that mostly but not exclusively affects children who live in inner city neighborhoods as well as industrial workers. The recurring nature of lead poisoning throughout history has resulted in its label as the "saturnine curse" (11).

The Ancient Egyptians and Greeks knew of the dangers of acute and chronic lead poisoning (8, 11, 17). Lead poisoning results in a broad spectrum of medical conditions. Besides peripheral neuropathies that most commonly result in radial nerve palsy (i.e., saturnine palsy), other neurological complications are encephalopathy, epilepsy, dementia ("crazy as a painter"), and delirium. Medical conditions include anemia, colic, constipation, nephropathy, and gout. Moreover, the history of saturnine gout parallels that of lead poisoning. Gout has long been recognized as being common among the rich (the "disease of the kings") because of their consumption of port or sherry, as well as among the poor who drank moonshine. Hippocrates knew about a rich man's gout and a poor man's gout (17). Gout was also associated with neuritis (2), and, significantly, debauchery was the usual precursor of gout.

Lead poisoning resulting in extensor paralysis was well known in Ancient Rome. Soranus, Caelius Aurelianus, and later Paulus of Aegina (8) described it. In fact, Dioscorides (8) warned of lead's dangers, stating that corrected wine was most hurtful of the nerves. Radial neuropathy from lead poisoning may have afflicted Livy and Van Gogh (9). This peripheral nerve complication is relatively rare now and infrequently affects children.

FIGURE 3. The homology between Saturn and Cronus can be seen in the previous logo of Greek airline Cronus Airlines, which was recently merged with Aegean Airlines. In antiquity, Saturn was the seventh known planet, and lead was the seventh metal. Molten lead can absorb other metals, which reminded Greeks of Cronus devouring his offspring. To astrologists, Saturn was remote and slow in motion, and the word saturnine came to mean sluggish, cold, and gloomy in temperament related to lead intoxication.



FIGURE 2. In this relief, Saturn is holding a knife in front of an animal that is about to be sacrificed.



FIGURE 4. This relief shows Rhea giving to her husband Cronus a stone wrapped in swaddled clothes disguised as their infant Zeus. Cronus had heard a prophecy that he would be displaced by one of his sons, just as he had overthrown his own father. Cronus, who had devoured his first five children—Demeter, Hades, Hera, Hestia, and Poseidon—ate the stone. Rhea had carried Zeus to Mount Ida in safety.

COULD THE PHRASE SATURDAY NIGHT PALSY HAVE BEEN INTRODUCED AS A RESULT OF CONFUSION WITH SATURNINE PALSY?

Saturday night palsy, like saturnine palsy, commonly presents with a radial nerve palsy (predominant motor palsy). It is perhaps not coincidental that the terms *Saturday night palsy* and *saturnine palsy* share similar etymological roots and sound alike. *Saturday night palsy* may represent a simplification of the term *saturnine palsy* and may have been used by patients with paralysis caused by alcohol who were unfamiliar with the more literary term *saturnine*. This sort of derivation is well known: we can see it in the English word *palsy*, which derives from *paralysis*, which derives from the Old French word *paralesie*, or *Saturday*, from *Saturni dies*.

HOW AND WHEN DID THE WORD CREEP IN?

In the 19th century, two distinct English terms that referred to radial nerve palsy were in active use (*sleep palsy*, i.e., from malposition due to local pressure, and *saturnine palsy*). Famed

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neurologists, including Mitchell (15), Duchenne (5), and Gowers (10), described cases of these entities. The differential diagnosis of radial nerve palsy in the arm also included alcohol-related sequelae, compression neuropathy (22), cold-induced palsy, and syphilis (1, 4). At times, saturnine palsy and sleep-induced palsy appeared side-by-side in French medical textbooks to refer to a compressive neuropathy (3). In fact, these other diagnoses were often confused with lead palsy:

The most remarkable case within my knowledge was that of a laborer, who fell asleep in the street on a doorstep, after drinking heavily. There were marks of bruises on the back or outside of both arms, as if he had slept with the two limbs crossed under and behind his head. In fact, he was found by the police resting with one arm on the edge of the iron foot-scraper and the other on that of the step. He was so nearly poisoned by the alcohol taken as barely to escape death. On the second day he was found to have wrist-drop in both hands. A few weeks after, he came under my care, having been treated meanwhile for lead palsy, of which he had, however, no evidence save the extensor palsy. He recovered after very prolonged treatment by faradisation. (15, p 130)

The *Oxford Educational Dictionary* first identifies Saturday night palsy in a 1927 neurology text:

The frequent occurrence of wrist drop in alcoholics who fall asleep and lean heavily on the arm has given rise to the common designation of "Saturday night palsy." (29, p 249)

Soon thereafter, this term became widely used to refer to radial nerve palsy:

A similar ailment is called *shelter paralysis*, formerly known as *Saturday night paralysis* because its victims were generally payday tipplers. (25, p 2)

Berthe was suffering from what is known in the United States as *Saturday night paralysis*, . . . when drunken men go to sleep in gutters, with one arm across a sharp kerbstone. (18, p 216)

We found it in a 1917 English translation of Tinel's French text (27). The original French term used by Tinel (26) was *ancienne paralysie à frigore*. There is no apparent direct etymological link between *palsy à frigore* and *Saturday night palsy*. It is of interest, however, that *à frigore* (*froid*) alludes to the belief that the paralysis was caused by sleeping in the cold outdoor air, and Saturday night palsy often resulted from falling asleep outdoors on a park bench. *À frigore* was commonly used to describe spontaneous facial nerve paralysis (i.e., Bell's palsy) as well (7) and currently refers to neuropathies of an unknown cause. We do not know when the French equivalent *paralysie du samedi soir* was introduced to describe Saturday night palsy.

We suggest, however, that sometime in the late 19th or early 20th century, when lead poisoning was less prevalent, an English-speaking person (perhaps intoxicated at the time) mistook either the English *saturnine palsy* (or the French *la paralysie saturnine*) for *Saturday night paralysis*, or tried to make a pun. Because of the familiarity of this phrase, *Saturday night palsy* has become a widely used term for radial nerve paralysis and

even for the effects of alcoholism; but its derivation, if we are correct, refers to an even more toxic libation.

CONCLUSION

With or without lead, Saturday night palsy is related to overindulgence. Sunday morning palsy (i.e., peroneal nerve compression) probably is related to overcompensation from prolonged kneeling in church the next day. Or is it?

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Acknowledgment

We appreciate the assistance of Stephen W. Carmichael, Ph.D., Department of Anatomy, Mayo Clinic/Mayo Foundation, Rochester, MN.

COMMENTS

This article is a wonderful read! The major thesis of this delightful, well-researched article about the origin of the phrase *Saturday night palsy* is that the "Saturday" of the phrase actually evolved from the use of the term *saturnine*, which was used to refer to lead poisoning, which is another cause of radial palsy. The etymological evolution of this term is enjoyable to read. For example, the metal of Saturn, the Roman god of agriculture, was lead, thus the development of the word *saturnine*. Compression of the medial upper arm or axilla by prolonged draping of the arm over a park bench or, occasionally, compression by crutches can lead to a radial palsy in which the triceps as well as the brachioradialis, supinator, wrist, and finger extensors may become weak or paralyzed. Pressure on the radial nerve in the humeral groove or the outer arm from the patient's head or the patient's sleeping partner's head, or malposition of the arm while the patient is comatose, regardless of whether the patient's condition is associated with alcohol, will lead to a palsy in which the radial innervated triceps is spared because these branches originate in and travel for the most part to the triceps in the more medial side of the arm. Radial palsy that is due to plumbism is often associated with systemic signs of the illness, such as abdominal colic, constipation, and anemia. In addition to wrist drop and lack of finger extension, other nonradial innervated mus-

cles such as the abductor pollicis brevis and interossei can be involved.

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Neurosurgery has evolved to the point where it no longer merely informs but also enlightens and even entertains its readership. In San Diego at this year's annual meeting of the Congress of Neurological Surgeons, the theme of which was "Reinventing Neurosurgery," topics ranged from vasospasm to nanoneurosurgery to the analog and digital aspects of film to music and much more. The neurosurgeon is no longer obliged to consider only the nuts, bolts, and workings of the central nervous system. He or she is challenged to comprehend its many creations. As Hamlet said to Horatio in Shakespeare's *Hamlet*, "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy" (1, p 301).

This article questions what most of neurosurgeons take for granted: the meaning and derivation of the term *Saturday night palsy* in describing the peripheral nerve syndrome of radial neuropathy. The authors take readers on an odyssey that harkens back to Ancient Rome and 18th- and 19th-century Europe before returning to the present. It postulates fanciful yet plausible alternate explanations of how the term *Saturday night palsy* came into being, not from the obvious postural compression of the nerve after a bout of overindulgence but perhaps from the lead poisoning of saturnine palsy, which can cause a similar clinical problem. The authors make a *tour de force* argument that is based on historical associations of meaning and sound at which even James Joyce would have smiled. It is fitting that this article is written by two neurosurgeons, one from the august Mayo Clinic and the other from Louisiana State University of colorful New Orleans, as well as an educator. This article jars readers out of the complacency of accepting what seems obvious to consider a different explanation, which the authors present in a scholarly and entertaining manner.

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