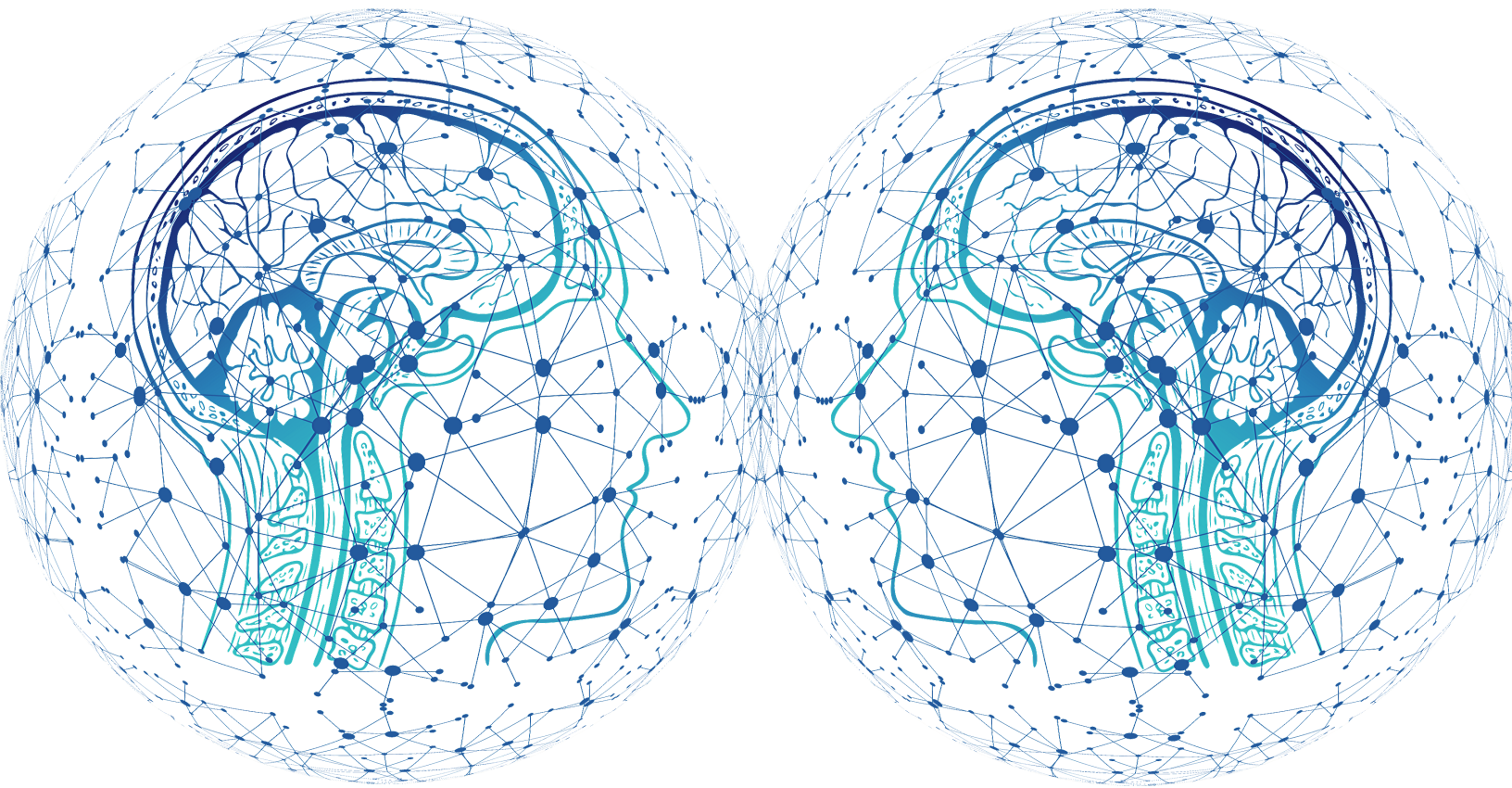




# Científico

**CIENTÍFICOS CON VALOR HUMANO**

FEBRUARY 2020 YEAR 1 NUMBER 2



**Neurosciences and love**



**ICES**

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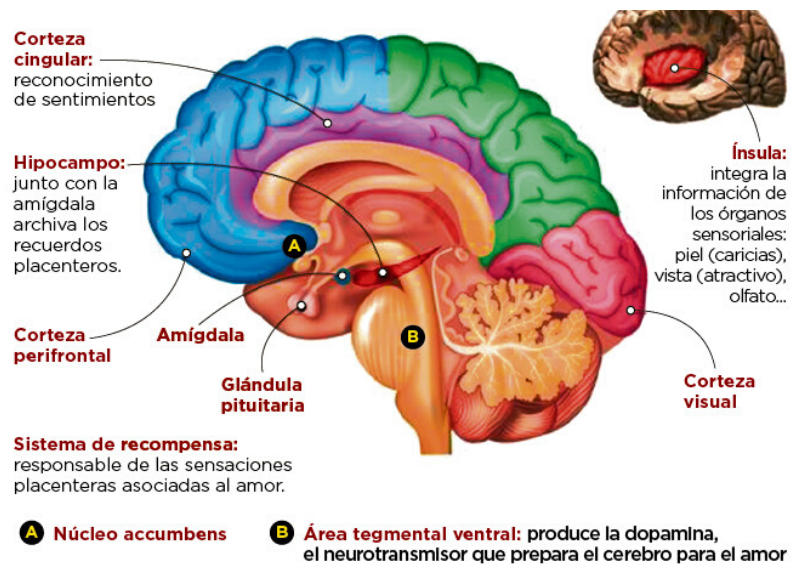
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# Love or biochemistry

Butterflies in the stomach, sweaty hands, blushing, classic symptoms of what we know as falling in love. But ... What happens? The crush has existed since man on earth and is based on the chemical processes that happen in the brain to recognize the person who activates the central nervous system. Contrary to the romantic vision that we associate with the feeling of falling in love, reactions in our brain occur very similar to those that a person with drug addiction suffers: serotonin levels subside and dopamine floods the brain areas of the reward. That is why we think obsessively about our partner and want to see him all the time.



**Falling in love is based on the chemical processes that activate the central nervous system.**

<https://www.elheraldo.co/salud/la-geografia-cerebral-del-amor-323959>

Four stages that activate the biochemistry of love are recognized:

1.- Falling in love: The pheromones secreted by the sweat glands activate a signal in the olfactory receptor, agitation is generated and there is a need to look for the origin of the disturbance when visual contact occurs the limbic system is activated. who is responsible for regulating physiological and emotional responses, immediately secretes the substance called Phenylethylamine (FEA).

2.- Attraction: The FEA spreads throughout the brain creating a state of semi-unconsciousness, the brain to recover in less than a second secret dopamine or norepinephrine; neurotransmitters that stimulate the hypothalamus, communicate chemically with the pituitary gland, from there to the thyroid, then to the pancreas, the adrenal glands, in the case of women with the ovaries and the case of men with the testicles, triggering increased blood pressure, slight temperature increase, chills, sweating, increased respiratory rate, and sighs, increased blood glucose, pupil dilation and stomach, and intestine contraction, these contractions are known as "butterflies in the stomach."

3.- Affection or attachment: The brain leveling the secreted substances activates natural painkillers: endorphin and enkephalin to calm the altered organs, the pancreas secretes insulin, oxytocin is produced that activates the need for tactile sensation with the loved one.

4.- Passion: The love process will close with sexual intercourse, the erotic impulses will be increasingly intense and with shorter intervals. The adrenal glands will increase your testosterone production, both in men and women.



Via Canva

**When the couple is observed the areas of the brain where the centers of pleasure and attachment lie.**

And what about the expression "love is blind"? mmm, something is true. British scientists studied the MRI of people in love when they watched their partner and noticed that the areas of the brain where the centers of pleasure and attachment lie are activated, while activity in areas where we associate negative emotions is reduced. Therefore, we are "blind" to the defects of the loved one.

Read more:

<https://www.europapress.es/chance/tendencias/noticia-datos-amor-reacciona-corazon-estar-enamorado-20170929080000.html>

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<http://www.revista.unam.mx/vol.9/num11/art90/art90.pdf>



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## Curious notes



Having friends helps us recover faster from illness.



On a first date, the heart beats faster, about 130 beats per minute.



Belonging to social groups and feeling identified, protects from depression. It also protects from dementia, especially older adults.



During sexual intercourse, the pulsations fire and can reach 160 -170 per minute.



Having friends helps us to secrete oxytocin (a hormone related to childbirth, lactation and social relationships) and makes us experience a feeling of well-being.



How do Mexicans celebrate the day of love and friendship?

22% give chocolates.

21% celebrate with breakfast or lunch or dinner.

8% give flowers.

5% give candy or treats.

4% enjoy the day with various entertainment activities.

4% goes to the movies.

3% give stuffed animals or toys.

2% give gift cards (not to miss).

Less than 1% give a visit to the SPA.

10% give another type of present.

20% do not celebrate this date.



The sense of smell helps us choose a partner.



The heart rate rises from 60 to 140 per minute when we kiss the loved one.



Being in love helps fight infections. Endorphins that are secreted at this stage help improve immune system functions.

Reference:

<https://www.kantarworldpanel.com/mx/Noticias-/Como--celebraremos-el-14-de-febrero-en-Mexico>

<https://www.nationalgeographic.es/ciencia/2017/11/que-es-el-amor-segun-la-ciencia-verdades-y-mentiras>

## In the voice of:



Roque Marcial  
ICES language teacher

The biological and chemical side is essential to develop the feeling called love and goes beyond what we feel, to talk about this topic our special guest is Roque Marcial.

What is love?

Love is a mood, a mental, personal, genuine and harmonious situation, something innate that is acquired through harmony where self-esteem is the only ingredient.

About the biochemistry of love that can tell us?

It is a combination of pheromones, adrenaline, oxytocin that we secrete without realizing it and makes us match the person that attracts us when they say that a person is in love, it shows in the brightness of the eyes, the smile, the way walk, that's where the biochemistry of love is reflected.

## Metaphors of love with Roque Marcial

By Wara S. Arias Ruiz

*"Love is like a repellent of hate"*

Love is in the air?

Love in a general language implies self-love, the air of love is in the voice, the blinking, the walking, speaks of our personality and how we transmit it.

What do you think of infidelity?

Infidelity is translated as unhappiness, although it can be compared to a delicious coffee, in the end, it can be harmful. Not only exist infidelity as a couple there is also social infidelity where you lack your principles, friendly infidelity when you are not being transparent, labor infidelity where you do not feel comfortable with what you are working on.

What is the difference between hate and love in a relationship?

Comparing, hate is like a garment that doesn't fit you, a shoe that hurts you when you walk, and love is the decision not to reuse what you don't have or hurt. Love remains a repellent of hate and the reflection of these moods is the face.



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*Dr: Luís Ariás  
Recommends:*

## TO PREVENT THE VÁRICES:

"Perform activities such as walking, jogging or dancing"



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### CLINICS IN:

MEXICO: XALAPA - BOCA DEL RÍO - COATZACOALCOS  
BOLIVIA: LA PAZ - SANTA CRUZ - EL ALTO - COCHABAMBA

### "Use of ultrasound or laser, plus exercises for the treatment of painful shoulder syndrome"

Escobar-Báez D., y León-Díaz, R.

In patients of the Institute of Security and Social Services for State Workers (ISSSTE) of the Xalapa region in the state of Veracruz, a comparative study of two treatment protocols (ultrasound, infrared lamp and exercises, and laser, infrared lamp and exercises) for painful shoulder syndrome was conducted to reduce pain, increase arches of movement and upper limb muscle strength. The patients in this study received: therapeutic ultrasound, infrared lamp thermotherapy and exercises, and the other group of thirteen patients, therapeutic laser, infrared lamp thermotherapy, and exercises. For both groups, the indices of pain, muscle strength and arches of the movement were evaluated and compared, and thus it was determined which of the two protocols can be suggested as a more effective therapeutic and rehabilitation option for patients with this pathology.

The results showed that the application of the protocol that includes the application of therapeutic ultrasound, infrared lamp and exercises allowed a greater decrease in pain compared to the group that was given laser, infrared lamp, and exercises. Regarding the arches of movement: flexion, adduction, internal and external rotation, no significant differences were obtained between both treatments. However, in the extension movement, the ultrasound treatment favored the increase in the degrees of mobility, compared to the laser treatment. Finally, in muscle strength, no significant differences were obtained between the treatments applied, a result that we consider derived from the short treatment period, although all patients improved their strength index according to the Lovett scale. Therefore, and although our results are discrete, this protocol provides evidence that the application of a protocol that includes the application of ultrasound, infrared lamp, and exercises, has better results in reducing pain and in the recovery of extension movement in patients with painful shoulder syndrome. This effect on pain reduction that occurs with the application of the protocol that includes ultrasound has already been reported in the literature, as well as its effect on tissue regeneration, which may have contributed to the recovery of arches of motion. The bibliographic review carried out to know the effects of the laser showed that with this it is obtained better results in the decrease of inflammatory processes; however, the patients treated with laser (in our case) did not obtain better results compared to those who were treated with the protocol that included an ultrasound.

## About:

### The rights of the sick

In Mexico, the Charter of the General Rights of the Patient provides 10 rights based on Mexican legal regulations and national and international precedents. Its objective is for the patient to create a doctor-patient relationship, and thus guarantee adequate medical care.

The general rights of patients are:

- 1.- To receive proper medical care.
- 2.- To be treated with dignity and respect.
- 3.- To receive sufficient, clear, timely and truthful information.
- 4.- To decide freely on their care.
- 5.- To give or withhold their validly informed consent.
- 6.- To be treated with confidentiality.
- 7.- To have facilities to obtain a second opinion.
- 8.- Receive medical attention in case of an emergency.
- 9.- Have a clinical record.
- 10.- Be treated when you are dissatisfied with the medical care you have received.

**Lengua Náhuatl**  
Náhuatl

**DERECHOS GENERALES DE LOS PACIENTES**  
**Veracruz**

- **Notech powi niksellis asitok tlapahtillistli**  
*Recibir atención médica adecuada.*
- **Notech powi niksellis yimelawak tlapahtillistli, ika miak mawisoitallistli**  
*Recibir trato digno y respetuoso.*
- **Notech powi nikmatis tlen tlapahtillistli moneki, tla itla nechpanos iwan kanin oksekan wellis nias nimopahtitlin**  
*Recibir información suficiente, clara, oportuna y veraz.*
- **Notech powi niksellis tlapahtillistli, san kemi neh niknekis**  
*Decidir libremente sobre su atención.*
- **Notech powi, nik tenkixtis, tlamo nikneki niksellis itla tlapahtillistli**  
*Otorgar o no tu consentimiento válidamente informado.*
- **Notech powi, amitla makihitoka tlen kokolistli nikpia**  
*Ser tratado con confidencialidad.*
- **Notech powi, nik tlatlanillis kana ome tlapahtihke, tlen kokolistli nikpia iwan kox nimopahtis**  
*Contar con facilidades para obtener una segunda opinión.*
- **Itech kaltlapahtilloyan, nakin "Urgencias" kipia tlen nech seliske, iwan nech pahiske**  
*Recibir atención médica en caso de urgencia.*
- **Notech powi, mayetokan amameh itech kaltlapahtilloyan, kanin machiohtok no nemilis (expediente clínico)**  
*Contar con un expediente clínico.*
- **Notech powi manech pahitikan, maski mayeto se tlahitolli nosoh teixpantillistli ika tlapahtihke**  
*Ser atendido cuando se inconforme por la atención médica recibida.*

<https://www.gob.mx/salud%7Cseguropopular/articulos/derechos-general-de-los-pacientes>

Iconography published by the Ministry of Health makes known the rights of the sick in the language of each state. In Veracruz, it was published in Nahuatl so that every patient knows their rights.

On the other hand, the rights of the terminal patient are:

- 1.- To be treated as a living human being.
- 2.- To receive optimal medical care without unnecessarily increasing his suffering (as far as possible without pain and consciously).
- 3.- To know the truth (diagnosis, procedures).
- 4.- The right to a reliable dialogue.
- 5.- To participate in decisions related to oneself and not be judged by them.
- 6.- To be able to express their feelings and have hope.
- 7.- To receive support in achieving their ultimate goals.
- 8.- To be heard and respected in their silence.
- 9.- To remain in the company of their loved ones.
- 10.- To have their religious beliefs respected.
- 11.- Not to die alone.
- 12.- To die in peace with dignity.

Patients' rights are commonly posted in public and private health care offices as part of the disclosure of patients' rights so that they are aware of the quality of service that should be provided to them. All health care professionals must know and apply them to build successful relationships with their patients.

## About:

### Ménière syndrome awareness

Ménière's Syndrome (MS) is a rare disease that affects the inner ear, hearing, and sense of balance. Its etiology is unknown and it occurs between the ages of 40 and 50, in both genders, with an annual incidence of 1000 cases per 100,000 inhabitants.

Treatment for MS is based on medication, such as vasodilators and diuretics, which are useful in many patients. It is recommended that a low-sodium diet be followed and that caffeine and tobacco consumption be restricted. Vestibular rehabilitation (VR) is also recommended. VR includes relaxation, breathing, and correction of postural disturbances, substitution exercises, habituation exercises, balance, and gait retraining exercises and repositioning maneuvers to achieve compensatory responses to positional vertigo.



change.org

**Meniere's syndrome  
occurs between the ages  
of 40 and 50.**

The main symptom of MS is rotational vertigo, which is often accompanied by tinnitus (ear noise) and hearing loss (hearing loss), as well as instability, loss of balance, and vomiting that manifest themselves to a greater or lesser extent depending on the patient.

A curious fact about this syndrome is that it has been associated with associated emotional problems triggering in female patients the lack of sexual desire, while in male patients erectile dysfunction.

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