

**The Lord is
like a strong
tower, where
the righteous
can go and
be safe.**

Proverbs 18:10

ISSN: 3116-4757

DIYARYO KABITENYO

News Publishing Service

Entered as FIRST CLASS MAIL at Imus Post Office with Business Mail Permit No. IC-19-06-249

Vol. 29 No. 20

June 29-July 5, 2026

P 10.00

**Be alert,
stand firm
in the faith,
be brave, be
strong.**

1 Corinthians 16:13

DMW holds housing fair for OFWs in Naic

The Department of Migrant Workers Regional Office IV-A has launched its first Housing Fair in Naic, Cavite, giving overseas Filipino workers access to affordable housing options and government programs that support their reintegration into the country.

The event served as a one-stop venue where OFWs explored housing projects, financing assistance, and other services designed to help them secure permanent

homes after working abroad.

The housing fair was organized in partnership with the Department of Human Settlements and Urban Development, Pag-IBIG Fund, the National Housing Authority, Social Housing Finance Corp., National Home Mortgage

Finance Corp., private developers, and the local government of Naic.

Participating agencies provided information on home financing, housing

assistance, and other government programs available to returning migrant workers.

The event also featured the signing of a memorandum of agreement among the DMW Regional Office IV-A, the Naic local government, the

Department of Labor and Employment IV-A, the Technical Education and Skills Development Authority IV-A, and the Overseas Workers Welfare Administration IV-A to strengthen



support programs for OFWs and their families.

OFW entrepreneurs from Cavite also displayed locally made products through the “Buy Lokal, By OFWs”

program, highlighting livelihood opportunities for returning migrant workers.

The DMW said the initiative is part of its continuing efforts

to help OFWs rebuild their lives by expanding access to housing, employment, and business opportunities upon their return to the Philippines.

School appeals to public to stop sharing Gentry classroom stabbing video

A private school left seven students injured.

In a statement posted on social media on June 23, Bethel Academy of Gen. Trias Cavite Inc. urged those

who have viewed or received the video not to circulate it any further.

“We respectfully appeal to anyone who may have viewed or received the footage not

to circulate it further.

Those who have saved, downloaded, posted, or shared the video are kindly asked to delete their copy and remove it from their accounts,”

the school said.

In a separate statement, the General Trias City Police said it is investigating the circulation of the leaked videos.

“The public is advised not to share, repost, upload, or disseminate these videos on social media or other online platforms.

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DIYARYO
KABITENYO

News Publishing Service

ISSN: 3116-4757

ARNULFO BARCO
(May 14, 1951 - September 2, 2024)
Founder

GENER BARCO
Publisher-Editor

Published by **DIYARYO KABITENYO News Publishing Service**, it has its editorial and business offices at Block 13 Lot 1 Liwayway Homes Subdivision, Anabu 1-C, City of Imus, Cavite. It is published and circulated weekly, every Monday, throughout the province of Cavite. It is registered with the Department of Trade and Industry with Business Name No. 6486090. Our Telephone No. is (046) 5463975, Mobile No.: 09179496918 and email address: barcogener@gmail.com.

Subscription Rate:

Advertising Rate:

1 month - P 40.00

Commercial - P200.00/col. cm.

3 months - 120.00

Legal- 160.00/col. cm.

(SCHOOL...from page 1)

Individuals found involves minors. spreading such content Continued viewing, may be held liable under downloading, saving, applicable laws,” police reposting, or sharing said. may cause further

The 32-second distress and compromise video, which later their privacy and well-spread widely on being,” the statement social media, showed a said. Earlier reports said female student wearing a 14-year-old female a school uniform student allegedly used entering a classroom a kitchen knife to attack with her back facing seven classmates inside the CCTV camera a classroom on June 16. before repeatedly Police have withheld attacking several specific details of female classmates the incident and the seated in front of her, identities of those causing panic among involved to protect the other students inside minors and the ongoing the room. The school investigation.

expressed concern over Bethel Academy the continued circulation stressed that it did not of the footage. authorize the public

“The footage release or circulation

New brain research shows speech acquisition functions differently than previously assumed

Acquiring a new recalling the intricate human speech learning This method prompted language or regaining movements needed for is largely sensory in participants to adjust speech may depend less speech relied mainly nature," stated David their speech patterns, on the brain's motion on motor sections of Ostry, Professor of forming a type of hubs than experts the brain. These areas Psychology at McGill speech motor learning. once thought. Fresh manage the motions of University. The group then applied data indicates that the face, mouth, and The outcomes transcranial magnetic areas responsible for vocal tract that enable might also assist in stimulation (TMS), a processing audio and speaking. The latest guiding the creation non-invasive technique physical touch play a discoveries indicate a of emerging brain- for brain stimulation, to far more significant different path. Rather speech technologies. momentarily interrupt part in speech learning than emphasizing motor Such systems could activity in three crucial and memory. The zones as the primary eventually aid in brain areas involved in investigation, carried out engine of speech restoring communication speech: the auditory by scientists at McGill learning, the study skills after a stroke by cortex, the somatosensory University and the Yale implies that auditory and integrating sensory cortex, and the motor School of Medicine, somatosensory systems processes to enhance cortex. Scientists assessed might transform scientific are vital for gaining and performance and the retention of the newly knowledge of how speech keeping new speech usability. To examine learned speech patterns is acquired and impact patterns. "Sensorimotor how various brain regions 24 hours later. the creation of future neuroscience has contribute to speech Their hypothesis speech recognition historically centered learning, the scientists was simple. If a specific and brain-driven on frontal motor areas initially modified brain region was vital communication tools. as the main drivers of participants' speech in for learning and storing For years, scientists movement. This research real time and played speech-related memories, have typically believed alters that perspective the altered speech back disrupting that zone that mastering and by demonstrating that through headphones. should lower retention.

of the CCTV footage, consequences under to report posts, pages, school said. noting that copies existing laws, including The school also urged anyone who were provided only the Data Privacy video on Facebook and encounters the footage to authorities for Act, the Cybercrime other online platforms. online or through investigation. Prevention Act, and count on everyone’s private messages not to The school also reminded the public that Education’s Child sensitivity and save, forward, or share unauthorized sharing Protection Policy. cooperation in bringing it, and to report the post of footage involving It likewise the circulation of the or account whenever minors may have legal encouraged the public footage to an end,” the possible.

**EXTRAJUDICIAL SETTLEMENT OF ESTATE
OF THE DECEASED SPOUSES RICARDO
HAYAG PAPA, SR. & NELINDA GARCIA
PAPA WITH ABSOLUTE SALE**

NOTICE is hereby given that the estate of the deceased **Spouses RICARDO HAYAG PAPA, SR. AND NELINDA GARCIA PAPA** who both died intestate at **Imus, Cavite** on September 14, 2007 and on July 7, 2011, respectively, consisting of one (1) parcel of land located at Caloocan City, covered by Transfer Certificate of Title No. T-121890 of the Registry of Deeds for Caloocan City, containing an area of TWO HUNDRED AND FIFTY TWO (252) Square Meters has been adjudicated and extrajudicially settled by and among their heirs in equal share; that, for and in consideration of the amount of ONE MILLION FIVE HUNDRED THOUSAND PESOS (P1,500,000.00), Philippine Currency, they do hereby sell, transfer and convey, the above-mentioned one (1) parcel of land, free from all liens and encumbrances, in favor of JAKE WEASLEY SAGUN and JAMES ANDREW SABADO, both single, of legal age, on May 12, 2026 at Gen. Trias City, Cavite before Notary Public Atty. Chares Marie R. Torres-Elacion and entered in her Notarial Register as Doc. No. 300; Page No. 61; Book No. 1; Series of 2026.

(Sgd.) **All Heirs**

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 15, 22 & 29, 2026

New vitamin B12 therapy shows promise against deadly brain cancer

A newly published study in *Oncoscience* explores a potential new approach to treating glioblastoma, an aggressive form of brain cancer that remains extremely difficult to treat. The paper is titled "Selective blood-brain barrier penetration and tumor targeting of nitrosylcobalamin in glioblastoma: Pharmacokinetics, tissue distribution, and synergistic activity with trail and temozolomide."

The research was led by first and

corresponding author Joseph A. Bauer of Nitric Oxide Services, LLC and the Cleveland Clinic Foundation Taussig Cancer Center. The team investigated nitrosylcobalamin (NO-Cbl), a modified form of vitamin B12 that releases nitric oxide, to determine whether it could cross the blood-brain barrier (BBB) and selectively accumulate in glioblastoma tumors. Glioblastoma multiforme (GBM) is among the most lethal and treatment-resistant

**DEED OF EXTRAJUDICIAL SETTLEMENT OF
REAL PROPERTY WITH PARTITION**

NOTICE is hereby given that the estate of the late **LUIS NARCISO NARTE** and **JUANITA SUAREZ NARTE** who both died intestate on May 11, 2000 at Manila City and on May 31, 2020 at Silang, Cavite, respectively, consisting of three (3) parcels of land situated at Imus, Cavite, General Trias, Cavite, and Guinayangan, Quezon , more particularly described as follows:

REAL PROPERTY 1: IMUS, CAVITE

A parcel of land located in Barangay Bucandala, Imus, Cavite, with an aggregate area of Two Hundred Fifty (250) square meters, more or less, and covered by Transfer Certificate of Title No. T-104857 of the Registry of Deeds for the Province of Cavite;

REAL PROPERTY 2: GENERAL TRIAS, CAVITE

A parcel of land located at Block 13, Lot 13, Barangay Biklatan, General Trias, Cavite, with an aggregate area of Two Hundred (200) square meters, more or less, and covered by Transfer Certificate of Title No. T-361875 of the Registry of Deeds for the Province of Cavite;

REAL PROPERTY 3: GUINAYANGAN, QUEZON

A parcel of land located in the Barangay Dungawan, Guinayangan, Quezon, with an aggregate area of One Hundred Four Thousand Seven Hundred Ninety-Nine (104,799) square meters, more or less, and covered by Transfer Certificate of Title No. T-115144 of the Registry of Deeds for the Province of Quezon,

has been adjudicated and extrajudicially settled by and between their compulsory heirs in the following manner:

1. TO THE HEIR/DAUGHTER: The properties located in Imus, Cavite (Transfer Certificate of Title No. T-104857) and General Trias, Cavite (Transfer Certificate of Title No. T-361875) are hereby adjudicated, transferred, and assigned entirely and exclusively to MARIA LUISA NARTE PAREDES;

2. TO THE HEIR/SON AND HEIR/DAUGHTER (EQUAL SHARE): The property located in Guinayangan, Quezon (Transfer Certificate of Title No. T-115144) shall be divided equally, with fifty percent (50%) undivided share going to JOEL SUAREZ NARTE and fifty percent (50%) undivided share going to MARIA LUISA NARTE PAREDES

on June 10, 2026 at Tanza, Cavite, Philippines before Notary Public Atty. Yvey Rose S. Caringal and entered in her Notarial Register as Doc. No. 425; Page No. 86; Book No. I; Series of 2026.

(Sgd.) **Heir/Son and Jean Luigi Narte
Janohan as Attorney-in-fact of Heir/
Daughter)**

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 22, 29 and July 6, 2026

cancers of the brain. Even with surgery, radiation therapy, and chemotherapy, patients typically survive less than 15 months after diagnosis. One major reason is the blood-brain barrier, a protective structure that blocks many drugs from reaching tumor tissue in the brain.

To evaluate NO-Cbl,

the researchers used several experimental methods. These included testing the compound against cancer cells in the NCI-60 human tumor cell line panel, conducting pharmacokinetic studies in rats with glioblastoma tumors, and examining how NO-Cbl performed in combination with other treatments in



REPUBLIC OF THE PHILIPPINES
PROVINCE OF CAVITE
MUNICIPALITY OF TANZA

LOCAL CIVIL REGISTRY OFFICE

Publication Notice
R.A.10172

NOTICE TO THE PUBLIC

Date: June 18, 2026

CCE - 0112-2026 RA 10172

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1 Guidelines in the Implementation of the Administrative Order No. 1, Series of 2012 (IRR on R.A. 10172), Notice is hereby served to the public that **FELY G. DIAZ**, has filed with this Office, a petition for **CORRECTION OF ENTRY IN CHILD'S SEX** from **"FEMALE"** to **"MALE"**, in the Certificate of Live Birth of **JEFF GARCIA DIAZ**, who was born on 5 March 2009 at Tanza, Cavite of parents FELY BALUTE GARCIA & URBANO JR. ABELLERA DIAZ.

Any person adversely affected by said petition may file his/her written opposition with this Office not later than **July 2, 2026**.

(Sgd.) **O FELIA U. ARGUSON**
OIC-Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 22 & 29, 2026

human glioblastoma cell lines. active in tumors for an extended period. Nitrate

The results showed that NO-Cbl had antitumor activity across a wide range of cancer types. Tumor cells originating in the central nervous system displayed a moderate level of sensitivity to the treatment. levels in tumor tissue stayed elevated for at least 24 hours after treatment, while nitrate levels in normal tissues dropped more quickly. This pattern suggests that NO-Cbl may be retained within tumors and deliver nitric oxide directly to the tumor microenvironment.

One of the study's most significant findings came from animal experiments. After being administered systemically, NO-Cbl successfully crossed the blood-brain barrier and accumulated preferentially within glioblastoma tissue. Figures 2 and 3 of the study (pages 3-4) show sustained levels of nitrate and cobalamin-related metabolites in brain tumor tissue compared with other organs, further supporting selective accumulation in glioblastoma.

Researchers also found evidence that the compound remained

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REPUBLIC OF THE PHILIPPINES
PROVINCE OF CAVITE
MUNICIPALITY OF TANZA

LOCAL CIVIL REGISTRY OFFICE

NOTICE OF PUBLICATION

In compliance with Sec. 5 of Rep. Act No. 9048, a notice is hereby served to the public that **LOIDA MANALILI PULIDO** has filed with this office a petition for **CHANGE OF FIRST NAME** from **"ANGUSTIA"** to **"LOIDA"** in the Certificate of Live Birth of one, **ANGUSTIA MANALILI PULIDO**, who was born on August 14, 1964 at Tanza, Cavite and whose parents were **AUGUSTO VIRAY PULIDO & LYDIA SAMSON MANALILI**.

Any person adversely affected by said petition may file his written opposition with this Office not later than **2nd July 2026**.

(Sgd.) **OFELIA U. ARGUSON**
OIC-Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 22 & 29, 2026



Republic of the Philippines
Province of Cavite
Municipality of Ternate
OFFICE OF THE MUNICIPAL CIVIL REGISTRAR



Publication Notice
R.A. 10172

NOTICE TO THE PUBLIC

JUNE 11, 2026

CCE-0015-2026/RA 10172

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1. Guidelines in the Implementation of Administrative Order No. 1 Series of 2012 (IRR on R.A. 10172). Notice is hereby served to the public that **ARCEE LIZARDO CABAÑA** has filed with this office, a petition for correction of entry in SEX/GENDER from "MALE" to "FEMALE" in the Certificate of Live Birth of ARCEE LIZARDO CABAÑA who was born on **2 JUNE 1997** at **Ternate, Cavite** and whose parents are **ROSENDO JR. TIONGCO CABAÑA** and **CRISTETA MOJICA LIZARDO**.

Any person adversely affected by said petition may file his/her written opposition with this office not later than **29 JUNE 2026**.

(Sgd.) **MARIETA R. LOZANO**
Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 22 & 29, 2026

(NEW...from page 3)

The researchers or temozolomide also examined whether produced much stronger NO-Cbl could improve suppression of tumor the performance of cell growth than any of established glioblastoma the treatments achieved therapies. In laboratory on their own. Additional studies using U87 and analysis confirmed D54 glioblastoma synergistic interactions cells, combining NO- across multiple dose Cbl with either TRAIL ranges. "This pilot study

R.A. Form No. 10.1 (LCRO)
(Devised 18 Aug. 2001)

Republic of the Philippines
Local Civil Registry Office
Province: Cavite
City of: Cavite

JUNE 23, 2026

NOTICE FOR PUBLICATION

In compliance with section 5 of R.A. No. 9048 a notice is hereby served to the public that **MARIA RUDORA F. LANUZA** has filed with this Office a petition for Change of First name from **"IRENE"** to **"IRENE ROSE"** in the Birth Certificate of **IRENE PELAGIO CANDAME** who was born on **MAY 4, 1968** in **CAVITE CITY, CAVITE** and whose parents are **FEDERICO N. CANDAME and REALITA C. PELAYO**.

Any person adversely affected by said petition may file his written opposition with this Office.

(Sgd.) **FLORDELIZA M. ALEJO**
OIC-City Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 29 and July 6, 2026



Republic of the Philippines
Province of Cavite

MUNICIPALITY OF MENDEZ-NUÑEZ
OFFICE OF THE MUNICIPAL CIVIL REGISTRAR

In the matter of Change of First Name
Certificate of Live Birth of **VIVIANA SUAYAN**

CFN #0006-2026 RA 9048

VIVIAN SUAYAN DELA REA
Petitioner

NOTICE OF PUBLICATION

There is a petition for the Change of First Name of **VIVIANA SUAYAN** from **VIVIANA** to **VIVIAN** who was born on **DECEMBER 2, 1969** at **MENDEZ, CAVITE** and whose parents are **ERLINDA MAGSINO** and **JUANITO SUAYAN**.

NOTICE IS HEREBY GIVEN that any interested person is cited to notify this office and show cause why the same should not be granted.

Let this Notice be published at least once a week for two (2) consecutive weeks in a newspaper of general circulation as required under Section 5 of Republic Act No. 9048.

(Sgd.) **NOREN A. PEROLA**
Municipal Civil Registrar/OIC

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 29 and July 6, 2026

demonstrates that NO- glioblastoma therapies." Cbl crosses the BBB, According to the accumulates selectively authors, NO-Cbl may in brain tumor tissue, also help address and synergizes several biological with established mechanisms that allow and experimental glioblastoma tumors

RA Form No. 10.0 (LCRO)

Republic of the Philippines
Office of the Municipal Civil Registrar
Rosario, Cavite

NOTICE FOR PUBLICATION

CFN-0006-2026

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1 Guidelines in the Implementation of the Administrative Order No. 1 Series of 2012 (IRR on R.A. 10172). Notice is hereby served to the public that **MA. VIVIAN P. VILLANUEVA** has filed in this office, a petition for **Change of First Name** from **VIVIAN** to **MA. VIVIAN** in the Certificate of Live Birth of **VIVIAN LIMJAP PRODIGALIDAD** at Rosario, Cavite and whose parents are **Reynaldo R. Prodigalidad** and **Teresita L. Limjap**.

Any person adversely affected by said petition may file his written opposition with this office not later than **13 July 2026**.

(Sgd.) **MARIA ROSARIO C. SORIANO**
Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 29 and July 6, 2026



REPUBLIC OF THE PHILIPPINES
PROVINCE OF CAVITE
MUNICIPALITY OF TANZA

LOCAL CIVIL REGISTRY OFFICE

NOTICE OF PUBLICATION

In compliance with Sec. 5 of Rep. Act No. 9048, a notice is hereby served to the public that **IRMA BLANCAFLOR SIRON** has filed with this office a petition for CHANGE OF FIRST NAME from **"LENIA"** to **"IRMA"** in the of Certificate Live Birth of one, **LENIA C. BLANCAFLOR**, who was born on December 22, 1968 at Tanza, Cavite and whose parents were **VIRGILIO BLANCAFLOR & EPIFANIA A. CATIENZA**.

Any person adversely affected by said petition may file his written opposition with this Office not later than **10th July 2026**.

(Sgd.) **OFELIA U. ARGUSON**
OIC-Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 29 and July 6, 2026

to resist treatment. more responsive to Previous research therapy, including referenced in the paper tumors that have showed that NO-Cbl developed resistance to can promote apoptosis temozolomide. through caspase-8 The authors stress activation, suppress NF- that these findings κB survival signaling, come from a pilot and strengthen TRAIL translational study and receptor signaling that further research through S-nitrosylation. will be required before Together, these the approach can be effects could make considered for clinical glioblastoma cells use.

**EXTRA JUDICIAL SETTLEMENT OF ESTATE
OF ELLEN CINCO ROBILLO WITH ABSOLUTE
SALE OF AN UNDIVIDED PORTION**

NOTICE is hereby given that the estate of the late **ELLEN CINCO ROBILLO** who died intestate on August 2, 2021, at City of Dasmariñas, Cavite, consisting of her conjugal share or FIFTY (50%) PERCENT of that certain parcel of land, without improvement, located at Ardia Vermosa, Barangay Pasong Buaya 1, City of Imus, Province of **Cavite**, with an aggregate area of THREE HUNDRED TWENTY-TWO (322) SQUARE METERS, MORE OR LESS, and covered by TCT No. 057-2022067131 has been adjudicated and extra-judicially settled by and among her heirs in pro indiviso or in equal shares; that, for and in consideration of the sum of TWELVE MILLION FOUR HUNDRED NINETY NINE EIGHT HUNDRED FORTY FOUR AND 47/100 (Php 12,499,844.47) PESOS, Philippine Currency, they do hereby CEDE, TRANSFER, SELL AND CONVEY to SPOUSES ALLAN RONALD U. BARAOIDAN and GEMMA D. BARAOIDAN, their heirs, assigns and successor-in-interest their respective shares in the above described real property, which is equivalent to his (Resty D. Robillo) corresponding conjugal share (equivalent to 161 square meters) and his corresponding one-third (1/3) share (equivalent to 53.66 square meters) he inherited from his deceased wife; and her (Ysabelle Mei Cinco Robillo) corresponding one-third (1/3) share (equivalent to 53.66 square meters) she inherited from her deceased mother, thus, a total of TWO HUNDRED SIXTY EIGHT AND THIRTY THREE (268.33) SQUARE METERS, MORE OR LESS, on February 10, 2026 at Tagaytay City, Philippines before Notary Public Atty. Valentin C. Guanio and entered in his Notarial Register as Doc. No. 374; Page No. 76; Book No. 244; Series of 2026.

(Sgd.) **Heir-Husband (for himself
and as representative of Heir-Son)
and Heir-Daughter**

Publication : DIYARYO KABITENYO News Publishing Service
Dates : June 29, July 6 & 13, 2026

Scientists discover ancient brain cells that help block distractions

Scientists have identified a group of neurons located in an ancient region of the brain that plays a key role in helping animals including humans. The findings could eventually help researchers develop more precise treatments for attention-related disorders.

focus. These cells appear to improve attention by filtering out distractions and directing the brain toward the most important information. "A hallmark of ADHD is that even faint distractors draw attention away -- and that's exactly what we see here when these neurons are silenced," said senior author Shreesh Mysore, a neuroscientist who studies neural circuits shared by all vertebrates, tied to behavior. "But the

very next day, when the neurons are turned back on, the same animal can ignore distractors again, even very strong ones."

The federally funded study was recently published in Nature Communications and selected as an editorial highlight.

Humans and other animals constantly sort through competing information, focusing on what matters most while ignoring less important signals. This ability, known as selective spatial attention, allows people to follow a conversation in a noisy room or spot a friend in a crowded space. Difficulties with this process are associated with conditions such as autism and Attention-Deficit/Hyperactivity Disorder (ADHD).

For many years, scientists believed that attention was controlled primarily by the prefrontal cortex, a brain region that is especially developed in humans and other primates. However, that explanation leaves an important question unanswered. Many animals can also focus

their attention despite lacking a highly developed prefrontal cortex.

"If we really go back in evolution, for hundreds of millions of years, birds have had this ability, fish have had this ability. And they do not typically have a highly developed prefrontal cortex, so how does the brain solve this problem?" said lead author Ninad Kothari, a postdoctoral fellow in the university's Department of Psychological and Brain Sciences. "We were able to identify an evolutionarily old region in the brainstem which affords this ability."

The researchers found that attention in mice is also regulated by a network of inhibitory neurons located in the brainstem. These neurons are present across vertebrate species, including birds and fish. The decision to investigate these cells in mice grew out of earlier work by Mysore and other researchers studying birds, frogs, and turtles.

To test the neurons' role, the team designed

an attention task similar to those used in human studies. Mice viewed visual cues on a screen and were rewarded when they correctly responded to information displayed directly in front of them while ignoring distracting cues appearing off to the side. The mice performed the task successfully until researchers temporarily switched off the brainstem neurons.

"When we inactivate these neurons, the mice become hyper distractable," Kothari said.

The scientists conducted additional tests to determine whether the mice were failing because of vision problems or movement difficulties. Those possibilities were ruled out. Instead, the experiments showed that the animals specifically lost the ability to evaluate competing information and focus on the most relevant signal.

"The only thing impaired was their ability to take the competing pieces of information, compare

them, and pay attention to the location with the most important information," Mysore said. "This part of the brain is like an attentional selection engine. It helps solve the question: 'What is most important information I should pay attention to right now?'"

The researchers now want to better understand exactly how these neurons influence spatial attention across vertebrate species and whether they serve a similar function in humans.

"All the evidence to date suggests that these neurons exist in humans too," said Mysore. "But are they responsible for selective spatial attention in humans? An exciting hypothesis is that they play a crucial role."

Future studies may examine the activity of these neurons in people with ADHD and autism. If researchers find that the cells function differently in those conditions, the discovery could help guide the development of more targeted medications and therapies.

FDA-approved drug may finally help immunotherapy defeat rare liver cancer

A rare and aggressive form of liver cancer has long resisted immunotherapy, a treatment that helps the body's own immune system attack cancer cells. Now, researchers have identified a potential way to overcome that resistance using an FDA-approved drug that is already available for another medical condition.

The findings suggest a possible new treatment strategy for fibrolamellar carcinoma, a rare liver cancer that primarily affects children and young adults. Fibrolamellar carcinoma makes up about 2% of all liver cancer cases. There is currently no cure, and the disease is often discovered only after it has spread to other parts of the body, leaving many patients with limited treatment options and poor survival prospects.

The study, published in the journal *Gastroenterology*, sheds light on why

immunotherapy has struggled against this cancer.

Researchers found that fibrolamellar tumors alter their surrounding environment in a way that prevents immune T cells from reaching the cancer. Instead of moving into the tumor and attacking cancer cells, the T cells become trapped elsewhere. This process, known as T-cell exclusion, effectively keeps the immune system from carrying out its normal cancer-fighting role. The team also discovered that AMD3100, a drug already approved by the U.S. Food and Drug Administration for another disorder, can disrupt this process. By preventing tumors from trapping T cells, the drug allows those immune cells to reach and attack the cancer.

"Our results provide among the first indications of why a type of immunotherapy called immune

checkpoint inhibition hasn't worked well in these patients, and even if this particular drug isn't the end-all-be-all, it teaches us that this T-cell exclusion phenomenon is an important one to tackle in fibrolamellar carcinoma," said Praveen Sethupathy '03, professor of physiological genomics and chair of the Department of Biomedical Sciences in the College of Veterinary Medicine.

Sethupathy served as co-senior author of the study alongside Dr. Venu Pillarisetty, a surgical oncologist at the University of Washington.

To better understand what was happening inside these tumors, researchers used a powerful technique known as single-nucleus transcriptomics.

This technology allowed the team to isolate the nucleus of individual cells within tumor tissue and determine which genes

were active in each cell. The approach provided an unprecedented view of the tumor microenvironment and the interactions taking place inside it.

"It wasn't until we were able to use this technology that the picture of the tumor microenvironment began to clear up for us," said Andreas Stephanou, a co-first author on the study and a Cornell graduate student co-mentored by Sethupathy and Iwijn de Vlaminck, associate professor in the Meinig School of Biomedical Engineering in the Duffield College of Engineering.

Immune checkpoint inhibitors work by activating the body's own T cells and encouraging them to move into tumors where they can destroy cancer cells.

These therapies have produced major benefits in several cancers, including liver, lung, kidney, and bladder cancers,

as well as melanoma. However, many other cancers, including pancreatic, prostate, and brain cancers, often do not respond well to these treatments. The researchers say that features of the tumor microenvironment, including T-cell exclusion, may help explain why some cancers remain resistant to immune checkpoint inhibitors. Fibrolamellar carcinoma gets its name from the thick fibrous bands that run throughout the tumors.

"Despite all of the recent advances in the study of this cancer, we still haven't pinpointed how these fibrous bands contribute, if at all, to the tumor's progression," Stephanou said.

The researchers found that these bands are produced by stellate cells, which are normal liver cells that become altered by the cancer. Once changed, the stellate cells release fibrous proteins that build

the characteristic bands within the tumor.

Using single-cell technology, the team discovered that these altered stellate cells also send signals to nearby T cells. Those signals direct the immune cells away from cancer cells and toward the fibrous bands, where the T cells become trapped.

"So, then we asked, what if we were to block this signaling in T cells with a compound?" Sethupathy said.

To test that idea, researchers in the Pillarisetty laboratory at the University of Washington used slices of patient tumor tissue and treated them with AMD3100.

The results showed that the drug successfully guided T cells back into the center of the tumors. When AMD3100 was combined with immune checkpoint inhibition, T-cell activation increased even further, resulting in a significant rise in tumor cell death.

Osteopenia is silently weakening bones in millions of people

Around 40% of adults worldwide are affected by osteopenia: a loss of bone mineral density. This condition is extremely common particularly in postmenopausal women and elderly adults. It's estimated that more than 500,000 fractures occur annually in the UK due to low bone density.

Osteopenia itself does not usually cause symptoms and it develops silently over time. Many people may not even be aware that they have the condition until they have experienced a fracture or had a bone density test, typically recommended because of risk factors such as age and menopause. This makes osteopenia a significant but often under-recognized public health issue.

Bone is a dynamic tissue that undergoes continuous renewal through a process called bone remodeling. During this process, old bone is broken down (resorption) and new bone is formed

(formation).

During early adulthood this process is balanced, so bone resorption equals bone formation. Bone mass usually peaks around a person's mid-20s to early-30s. After this peak bone loss gradually exceeds bone formation. Over time this leads to reduced bone density.

Ageing is the main risk factor for bone loss. But several additional factors can accelerate the process.

For instance, hormonal changes, especially the decline in estrogen after the menopause, can significantly increase bone breakdown. This is because estrogen helps protect bones by slowing the natural process of bone breakdown. Around one in two women over 50 will experience a fragility fracture.

Lifestyle also plays an important role. Smoking, excessive alcohol consumption and physical inactivity

can contribute to reduced bone strength over time. Diet is equally important. Insufficient calcium intake and low vitamin D can limit the body's ability to build and maintain strong bones.

Certain medications, particularly long-term steroid use, as well as health conditions that affect hormone levels or nutrient absorption (such as Crohn's or coeliac disease), can further increase the risk.

Detecting osteopenia early is crucial. This allows you and clinicians to take steps that can reduce the risk of fractures and prevent osteopenia progressing to osteoporosis, where bone loss is more advanced and the risk of fractures is significantly higher.

Bone mineral density is commonly measured using a dual-energy X-ray absorptiometry (DXA) scan. This is a type of low-dose X-ray scan used to assess bone strength. Results are usually given as a

T-score, which compares a patient's bone density to that of a healthy young adult. A T-score between -1.0 and -2.5 indicates osteopenia, while a T-score below -2.5 meets the diagnostic threshold for osteoporosis.

Management of osteopenia typically focuses on slowing down or preventing further bone loss and reducing the risk of fractures. This involves making lifestyle changes (such as avoiding smoking, limiting alcohol intake or maintaining healthy body weight), nutritional support and, in some cases, prescription treatment.

Weight-bearing exercises, such as walking, dancing or jogging stimulate bone formation by placing strain on the skeleton. Resistance training can further strengthen bones and muscles.

Research shows that regular physical activity is associated with improved bone mineral

density and may reduce the risk of osteoporosis. Exercise, such as Tai Chi, also improves balance and muscle strength, reducing the risk of falls that could lead to fractures.

Sufficient calcium intake supports bone structure too, while vitamin D helps the body absorb calcium efficiently. Foods such as dairy products, leafy green vegetables and fortified products are common dietary sources. Supplements may also be recommended where dietary intake is insufficient. In the UK, vitamin D deficiency is relatively common, so supplementation is often advised.

Not everyone with osteopenia requires drug treatment. Instead, clinicians often use a fracture risk assessment tool to evaluate ten-year probability of a fracture based on age, bone mineral density, steroid use and other risk factors.

If fracture risk is high or if a person has already experienced a fragility fracture, medications may be recommended. These can include antiresorptive drugs which slow bone breakdown and help maintain bone density. Such treatments are more commonly used in osteoporosis but may also benefit high-risk patients with osteopenia.

Osteopenia should not be viewed merely as a mild or early form of osteoporosis but rather as a warning sign and point of intervention. Progression from osteopenia to osteoporosis is not inevitable.

Evidence suggests that early detection and targeted lifestyle changes can maintain bone health, significantly slow bone loss and reduce risk of developing osteoporosis later in life. In some cases, bone density may even improve with appropriate treatment and lifestyle adjustments.

Researchers discover why fructose doesn't satisfy hunger like glucose

Fructose and glucose are two common sugars found in many foods and drinks. Although they contain the same number of calories, new research suggests the brain responds to them in very different ways.

Scientists at the Monell Chemical Senses Center discovered that fructose and glucose communicate with the brain through separate gut-brain pathways. Their findings indicate that these differences may influence food and beverage preferences and could help explain why certain sweetened products are especially appealing.

The study, published June 10 in the journal *Neuron*, identified a specific signaling route that allows fructose to communicate with the brain. In experiments involving mice, researchers found that this pathway which play a major role in driving hunger. When researchers disrupted this pathway, fructose could no longer affect those neurons. Glucose produced a very different response. According to the researchers, it did not rely on the same PYY-Y2 vagus nerve pathway. Instead, glucose strongly suppressed AgRP neuron activity, resulting in a much larger effect on hunger-related brain signaling.

Although fructose and glucose produced similar short-term effects on food intake, the mice eventually developed preferences that corresponded to the degree of AgRP neuron inhibition triggered by each sugar. The researchers also examined high-fructose corn syrup (HFCS), a widely used sweetener made from a combination of fructose and glucose.

that this pathway was far less effective than the one used by glucose when it came to reducing activity in neurons associated with hunger.

"This work adds to our growing understanding of how modern diets, especially those high in fructose or high-fructose corn syrup, interact with the neural systems involved in appetite," said senior author and Monell Member Amber Alhadeff, PhD. To investigate how the sugars influence the brain, researchers recorded neural activity in mice after exposure to fructose and glucose.

The team found that fructose increased levels of the gut hormone PYY. That hormone then signaled through the vagus nerve, leading to a modest reduction in the activity of agouti-related protein (AgRP) neurons,

Study challenges a common belief about vitamin D and sunlight

Researchers from backgrounds.

Newcastle University's Human Nutrition and Exercise Research Centre analyzed vitamin D levels in nearly 300 people living across northern Britain. Their results suggest that a significant number of people could have low vitamin D year-round without realizing it, potentially affecting bone health, overall well-being, and long-term health outcomes.

Perhaps most notably, vitamin D levels did not improve during the summer months. This finding runs counter to the common assumption that increased exposure to sunlight during summer is enough to bring vitamin D levels back into a healthy range.

"The message is simple but important. If you are in a higher-risk group, you can't assume that spending more time outdoors in summer will solve the problem."

Vitamin D is essential for maintaining healthy bones and supporting overall health. Insufficient levels have been associated with a greater risk of conditions including osteoporosis, rickets, and weakened immune function.

"We need to be thinking about more consistent, year-round ways to support healthy vitamin D levels."

Participants were recruited locally through both community outreach and online methods. Each person completed a simple finger-prick blood test, and the samples were analyzed by a specialist laboratory.

The study adds point to a need for more targeted public health strategies. Researchers suggest that clearer guidance, brief vitamin D assessments during GP appointments, and vitamin D supplementation when appropriate could help address the issue.

The findings also point to a need for more targeted public health strategies. Researchers suggest that clearer guidance, brief vitamin D assessments during GP appointments, and vitamin D supplementation when appropriate could help address the issue.

Bernard Corfe, Professor of Human Nutrition and Health at Newcastle University and co-leader of the study, said: "What's striking about these findings is that vitamin D levels didn't improve, even in the summer months when we would usually expect them to recover."

The researchers found that vitamin D insufficiency was common in both groups studied. More than half of the older adults had insufficient vitamin D levels, while the proportion was even higher among participants from minoritized ethnic backgrounds.

"For people living in places like the North of England, this shows that sunlight alone may not be enough, particularly for older adults and those from minoritized ethnic backgrounds.

The study adds important evidence to an area that has received relatively limited attention and offers a better understanding of year-round vitamin D risk among vulnerable populations.