The Lord is like a strong tower, where the righteous can go and be safe.
Proverbs 18:10

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DIYARYO
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Nagmamalasakit sa lalawigan

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Be alert, stand firm in the faith, be brave, be strong.
1 Corinthians 16:13

Imus hospital beds for Covid patients reach full capacity

IMUS CITY, Cavite – Hospital beds for Covid-19 patients in this city have reached full capacity as cases increased last Aug. 27.

Based on the latest data of Ospital ng Imus (ONI) in Barangay Malagasang, emergency rooms, Covid wards and intensive care units (ICU) have been fully occupied.

"Since August 10 to present, we are in full bed capacity. We have an extension air-conditioned ER (emergency room) tent, and some of the patients are staying in ambulances, while waiting for admission. We want patients to be examined," Dr. Edgardo Figueroa, ONI

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SWAB ON WHEELS. The Imus Hospital in Cavite has reached its full capacity, forcing health care workers to perform swab tests for Covid-19 on patients in a nearby ambulance.

On Jonvic's jab plea: Roque says 20M vaccines coming to Cavite, rest of Calabarzon

Huge allocations of the coronavirus disease (COVID-19) vaccine–enough to inoculate 10 million people–will be sent to the provinces of Region IV-A or Calabarzon in the last four months of the year.

Presidential Spokesperson Harry Roque gave this assurance to Gov. Jonvic Remulla last Aug. 26, just hours after the latter made a cry for help on social media regarding the province's difficulty in obtaining ample supply of the life-saving jabs.

"Well, Governor Remulla, your wish is granted," Roque said during a virtual press briefing.

"Talaga naman pong pinaplano ng gobyerno na ngayong malapit nang mag-50 percent [na fully-vaccinated] ang Metro Manila ay karamihan na po ng mga bakuna ay ipapadala natin doon sa mga karatig-probinsiya ng Metro Manila, iyong 'plus' areas, pati na rin po doon sa mga lugar na nagsa-surge 'no," he said.

According to the Palace mouthpiece, Region IV-A–composed of Cavite, Batangas, Laguna, Quezon, Rizal, and the city of Lucena–will receive 3,814,000 vaccine doses

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DIYARYO KABITENYO

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Publisher - Editor

GENER BARCO
Operations Manager

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Young athletes with history of concussions may have more changes to their brains

A new study suggests athletes with a history of concussion may show more brain injury from a later concussion, particularly in middle regions of the brain that are more susceptible to damage, when compared to athletes with no history of concussion. The research is published in the August 25, 2021, online issue of Neurology®, the medical journal of the American Academy of Neurology. The athletes participated in sports like football, volleyball and soccer.

"We know concussions may have long-term effects on the brain that last beyond getting a doctor's clearance to return to play," said study author Tom A. Schweizer, PhD, of St. Michael's Hospital in Toronto, Canada. "It is unclear, however, to what extent the effects of repeated concussion can be detected among young, otherwise healthy adults. We found even though there was no difference in symptoms or the amount of recovery time, athletes with a history of concussion showed subtle and chronic changes in their brains."

This study focused on changes within two areas in the middle of the brain that are especially vulnerable to concussion.

Researchers focused on blood flow in the cingulate cortex and white matter microstructure in the corpus callosum. Changes in blood flow and microstructure that show up on brain scans can indicate underlying brain injury.

(IMUS... from page 1)

hospital director, said in an interview.

The De La Salle University Medical Center in Mangubat Avenue, Dasmariñas City, announced on their social media page it has also reached full capacity for Covid-19 related cases. The hospital advised patients who require Covid-19-related treatment to seek urgent care in other facilities in the meantime.

Non-Covid cases are still open for admission as outpatients. This is the second time the private medical institution in the province has declared full capacity for Covid-related cases.

"We are now having 30 patients on our 13-bed capacity ER for Covid cases, 46 patients on Covid ward on the third floor and 6 patients on ICU," Figueroa said.

Meanwhile, the St. Dymphna Mega Isolation Facility in Barangay Palico has 182 patients as of Aug. 27.

City-run public hospital admitted 30 percent non-residents and 70 percent local residents on minimal fees.

Imus has 12,124 confirmed cases as of Aug. 24 with 1,656 active cases (106 admitted, 1,510 in home quarantine, 40 in isolation facility), 10,118 recoveries and 350 deaths.

The top five villages with active Covid-19 cases are Buhay Na Tubig 14; Pasong Buaya 2: 96; Carsadang Bago 2: 78; Malagasang 1-G, 64; and Alapan 1-A.

Dr. Figueroa added that ONI is open for Covid-19 positive dialysis patients from Mondays to Saturdays.

(ON... from page 1)

in September.

"And for the rest of the fourth quarter, IV-A will receive the biggest allocation at 17,475,388 [doses]," added Roque.

"So you can see that in the last quarter, magkakaroon po kayo ng almost 20 million dosages na good for ten million. So inaasahan po natin na makakahabol po ang plus areas sa Metro Manila," he said.

Roque added that Region III or Central Luzon (Aurora, Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac, and Zambales) will be receiving 17 million this fourth quarter.

As for Metro Manila, Roque said that one million vaccine doses will be received by the region in September, while only four million jabs will be sent there for the fourth quarter.

Remulla, in a Facebook post last Aug. 26, said Cavite would need a total of six million doses to achieve herd immunity, or inoculating 70 percent of its target population against COVID-19. However, the province has only received one million doses from the national government so far.

Remulla, a last-minute supporter of the presidential campaign of then-Davao City mayor Rodrigo Duterte, also appealed to the national government to let local government units (LGUs) procure their own COVID vaccines.

Republic of the Philippines
OFFICE OF THE MUNICIPAL CIVIL REGISTRAR
Indang, Cavite

Publication Notice
R.A. NO. 10172

NOTICE TO THE PUBLIC

17 August 2021

CFN-0003-2021
CCE-0024-2021 RA. NO. 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 **LEONILA P. PERLADO** has filed with this Office, a petition for ***change of first name*** from **LEONIDA** to **LEONILA** and ***correction of entry in the date of birth*** from **April 5, 1962** to **April 11, 1962** in the Certificate of Live Birth of **LEONIDA PAPA** at Indang, Cavite and whose parents are **Rodolfo Papa** and **Julia Morlas.**

Any person adversely affected by said petition may file his/her written opposition with this Office not later than **September 6, 2021**.

(Sgd.) **MERCI A. CHAVEZ**
Municipal Civil Registrar

DIYARYO KABITENYO - August 23 & 30, 2021

MOGONET provides more holistic view of biological processes underlying disease

Genomics, proteomics, metabolomics, transcriptomics -- rapid advances in high-throughput biomedical technologies has enabled the collection of data with unprecedented detail from the growing number of omics. But, how best to take advantage of the interactions and complementary information in omics data?

To fully utilize the advances in omics technologies to achieve a more comprehensive understanding of the biological processes underlying human diseases, researchers from Regenstrief Institute and Indiana, Purdue and Tulane Universities have developed and tested MOGONET, a novel multi-omics data analysis algorithm and computational methodology. Integrating data from various omics provides a more holistic view of biological processes underlying human diseases. The creators have made MOGONET open source, free and accessible to all researchers.

In a study published in Nature Communications, the scientists demonstrated that MOGONET, short for Multi-Omics Graph cOnvolutional NETworks, outperforms existing supervised multi-omics integrative analysis approaches of different biomedical classification applications using miRNA expression data, DNA methylation data, and microRNA expression data.

Portable MRI provides life-saving information to doctors treating strokes

When patients exhibit stroke symptoms, doctors must quickly make a life or death determination: Are their symptoms caused by a clot that can be treated with blood thinners or by bleeding in the brain, which may require surgery? A new Yale-led study shows that a portable MRI device can help identify such intracranial hemorrhages, potentially life-saving information particularly in areas or scenarios where access to sophisticated brain imaging scans are not readily available.

The results were published Aug. 25 in the journal Nature Communications.

"There is no question this device can help save lives in resource-limited settings, such as rural hospitals or developing countries," said Kevin Sheth, professor of neurology and neurosurgery at Yale School of Medicine and co-corresponding author of the research. "There is also now a path to see how it can help in modern settings. It is of critical importance to continue to collect more data across a range of stroke characteristics so that we can maximize the potential benefit of this approach."

For the study, the research team examined the efficacy of a device known as the Portable Point-of-Care MRI system. According to researchers, it can be wheeled down a hospital hallway, costs a fraction of traditional MRI technologies, and can be used almost anywhere by medical technicians with even minimal training. It was developed by Hyperfine Research Inc., a part of the Guilford, Connecticut-based medical technology incubator 4Catalyzer.

The Yale team, which was led by Sheth and Mercy Mazurek, a clinical research analyst and first author, and co-corresponding author W. Taylor Kimberly of Massachusetts General Hospital, compared the results of portable MRI scans of 144 patients at Yale New Haven Hospital with results obtained from traditional neuroimaging scans. Specifically, the portable MRI was used to scan brain injury patients at the bedside.

Neuroradiologists interpreting images acquired by Hyperfine's portable MRI correctly identified 80% of intracerebral hemorrhages.

DEED OF EXTRAJUDICIAL SETTLEMENT OF THE ESTATE OF ANTONIO M. ORCULLO WITH WAIVER OF RIGHTS

NOTICE is hereby given that the estate of the deceased **ANTONIO M. ORCULLO** who died intestate on March 18, 2021 at Our Lady of the Pillar Medical Center, Imus, Cavite, consisting of several parcels of land, more particularly described as follows:

Transfer Certificate of Title No. T-445017-Imus
(With Improvement)

A parcel of land situated in the Bo. of Alapan, Mun. of Imus, Prov. of Cavite, containing an area of TWO HUNDRED EIGHTY FOUR SQUARE METERS AND FIFTY SQ. DECIMETERS (284.50) more or less;

A residential house with floor area of 90 sq. meters, covered by **Tax Declaration No. 09-0005-09534**;

Transfer Certificate of Title No. T-110667-Imus
(With Improvement)

A parcel of land situated in the Barrio of Anabu Primero, Mun. of Imus, Prov. of Cavite, containing an area of TWO HUNDRED FORTY NINE (249) SQUARE METERS, more or less;

Commercial Bldg. with Floor Area of 97-16/9.50 sq. meters and covered by **Tax Declaration No. 239-0007-17958**;

Transfer Certificate of Title No. T-57103-Imus
(With Improvement)

A parcel of land situated in the Barrio of Anabu, Mun. of Imus, Prov. of Cavite, Is. of Luzon, containing an area of NINE HUNDRED FIFTY ONE (951) SQUARE METERS, more or less;

Apartment House III-C (2 Doors) with Floor Area of 74 sq. meters and covered by **Tax Declaration No. 09-0007-08171**;

House IV with Floor Area of 42 sq. meters and covered by **Tax Declaration No. 09-0007-08172**;

House IV with Floor Area of 33 sq. meters and covered by **Tax Declaration No. 09-0007-08173**;

Apartment House (4 Doors)/Apt. House (4Doors) III-B and covered by **Tax Declaration No. 09-0007-08174**;

House IV with Floor Area of 33 sq. meters and covered by **Tax Declaration No. 09-0007-08175**;

Apartment House (4 Doors) III-D with Floor Area of 109 sq. meters and covered by **Tax Declaration No. 09-0007-08176**;

Transfer Certificate of Title No. T-775568-Imus
(With Improvement)

A parcel of land situated in the Brgy. Bayan Luma, Mun. of Imus, Prov. of Cavite, Is. of Luzon, containing an area of SEVENTY (70) SQUARE METERS, more or less;

House III-C w/ 4 Unit Stalls with Floor Area of 400 sq. meters and covered by **Tax Declaration No. 09-0009-07816**;

Transfer Certificate of Title No. T-687610-Imus
(With Improvement)

A parcel of land situated in the Bo. of Anabu, Mun. of Imus, Prov. of Cavite, Is. of Luzon, containing an area of TWO HUNDRED FIFTY (250) SQUARE METERS, more or less;

House IV with Floor Area of 60 sq. meters and covered by **Tax Declaration No. 09-0008-08509**;

Transfer Certificate of Title No. T-117179-Imus
(With Improvement)

A parcel of land situated in the Barrio of Anabu 2nd, Mun. of Imus, Prov. of Cavite, Is. of Luzon, containing an area of TWO HUNDRED SIXTY EIGHT (268) SQUARE METERS, more or less;

Transfer Certificate of Title No. T-117180-Imus
(With Improvement)

A parcel of land situated in the Barrio of Anabu 2nd, Mun. of Imus, Prov. of Cavite, Is. of Luzon, containing an area of TWO HUNDRED THIRTY EIGHT (238) SQUARE METERS, more or less;

Transfer Certificate of Title No. T-117181-Imus
(With Improvement)

A parcel of land situated in the Barrio of Anabu 2nd, Mun. of Imus, Prov. of Cavite, Island of Luzon, containing an area of TWO HUNDRED SEVENTY (270) SQUARE METERS, more or less;

Transfer Certificate of Title No. T-117182-Imus
(With Improvement)

A parcel of land situated in the Barrio of Anabu 2nd, Mun. of Imus, Prov. of Cavite, Is. of Luzon, containing an area of TWO HUNDRED FORTY (240) SQUARE METERS, more or less;

Commercial Apartment erected on Lots 1,2,3 & 4 with Floor Area of 160-158 and covered by **Tax Declaration No. 09-0007-08169**;

Transfer Certificate of Title No. T-789260-Imus
(With Improvement)

A parcel of land situated in the Brgy. of Anabu, Mun. of Imus, Prov. of Cavite, containing an area of TWO HUNDRED SEVENTY THREE SQUARE METERS AND FIFTY SQUARE DECIMETERS (273.50) more or less;

Residential house with floor Area of 130 and 74 and covered by **Tax Declaration No. 239-0007-17956**;

Transfer Certificate of Title No. T-280999-Dasmariñas
(With Improvement)

A parcel of land situated in the Bo. of Salitran, Mun. of Dasmariñas, Prov. of Cavite, containing an area of THREE HUNDRED SIXTY (360) SQUARE METERS, more or less;

Commercial Apartment with floor area of 18/155.68 and covered by **Tax Declaration No. 23709250048013**;

Transfer Certificate of Title No. T-217713-Bacoor
(With Improvement)

A parcel of land situated in the Barrio of Salitran, Mun. of Bacoor, Prov. of Cavite, containing an area of ONE THOUSAND FIVE HUNDRED NINETY ONE (1,591) SQUARE METERS, more or less;

A residential house with floor area of 239 sq. meters, covered by **Tax Declaration No. 19-238-0037-09141**;

Transfer Certificate of Title No. T-445018-Bacoor
(With Improvement)

A parcel of land situated in the Bo. of Aniban, Mun. of Bacoor, Prov. of Cavite, containing an area of ONE HUNDRED FIFTY (150) SQUARE METERS, more or less;

A residential house with floor area of 70 sq. meters, covered by **Tax Declaration No. 03-0003-02710**;

Transfer Certificate of Title No. T-532558-Bacoor
(Land Only)

A parcel of land situated in the Bo. of Molino, Mun. of Bacoor, Prov. of Cavite, containing an area of THREE HUNDRED THIRTY THREE (333) SQUARE METERS, more or less

has been adjudicated and extrajudicially settled by and among his heirs in equal shares, pro indiviso, with ANTONINA M. ORCULLO waiving, renouncing and donating all her rights, interests and participation over the estates in favor of her CHILDREN namely: ROSEMARIE O. BERMUDEZ, ANTHONY M. ORCULLO, RUBYROSE M. ORCULLO AND NOEL M. ORCULLO on March 8, 2021 at Makati City before Notary Public Atty. Antonio M. Dionela and entered in his Notarial Register as Doc. No. 525; Page No. 106; Book No. 2; Series of 2021.

(Sgd.) **Surviving Spouse and Surviving Children**

Publication : DIYARYO KABITENYO
Dates : August 23, 30 and September 6, 2021

Baby detector software embedded in digital camera rivals ECG

University of South Australia researchers have designed a computer vision system that can automatically detect a tiny baby's face in a hospital bed and remotely monitor its vital signs from a digital camera with the same accuracy as an electrocardiogram machine.

Using artificial intelligence-based software to detect human faces is now common with adults, but this is the first time that researchers have developed software to reliably detect a premature baby's face and skin when covered in tubes, clothing, and undergoing phototherapy.

Engineering researchers and a neonatal critical care specialist from UniSA remotely monitored heart and respiratory rates of seven infants in the Neonatal Intensive Care Unit (NICU) at Flinders Medical Centre in Adelaide, using a digital camera.

Republic of the Philippines
Province of Cavite
OFFICE OF THE CITY CIVIL REGISTRAR
Trece Martires City

NOTICE FOR PUBLICATION

In compliance with Section 5 of Republic Act No. 9048, a notice is hereby served to the public that **WILMA R. MORESCO** has filed with this office a **PETITION FOR CHANGE OF FIRST NAME** from **"MARIA" to "WILMA"** in the Certificate of Live Birth of **MARIA DILAIBA RICAFRENTE** who was born on **March 18, 1967** in **Trece Martires City, Cavite** and whose parents are **REMEGIO P. RICAFRENTE and NORMA P. DILAIBA.**

Any person adversely affected by said petition may file his/her written opposition with this office not later than **September 13, 2021.**

(Sgd.) **MAXIMO JR. L. LONTOC**
City Civil Registrar

DIYARYO KABITENYO - August 30 and September 6, 2021

EXTRAJUDICIAL SETTLEMENT OF THE ESTATE of TIRSO D. TORNEROS JR.

NOTICE is hereby given that the estate of the late **TIRSO D. TORNEROS JR.** who died intestate on August 02, 2020 in Imus, Cavite, Philippines, consisting of the following real properties, more particularly described as follows:

• A parcel of land situated in the Bo. of Wakas, Mun. of Kawit, Prov. of Cavite, Is. of Luzon, covered by TCT No. (T-90213) - 0026317, containing an area of ONE HUNDRED EIGHTY (180) SQ. METERS, more or less;

• A parcel of land sit. in the Mun. of Kawit, Prov. of Cavite, covered by TCT No. (T-619123) - 2014012471, containing an area of THREE HUNDRED EIGHTY (380) SQ. METERS, more or less;

• A parcel of land situated in the Barrio of Tanzang Luma, Municipality of Imus, Province of Cavite, Island of Luzon, covered by TCT No. T-484648, containing an area of ONE HUNDRED FORTY (140) Square meters, more or less;

• A parcel of land situated in the Bo. of Tanzang Luma, Municipality of Imus, Province of Cavite, Island of Luzon, covered by TCT No. T-484640, containing an area ONE HUNDRED NINETY NINE (199) Square Meters, more or less;

• A parcel of land situated in the Barrio of Tanzang Luma, Municipality of Imus, Province of Cavite, Island of Luzon, covered by TCT No. T-484644, containing an area of FOUR HUNDRED TEN (410) Square Meters, more or less; and

• A parcel of land situated in the Barrio of Ulat, City of Tagaytay, covered by TCT No. T-23523, containing an area of ONE THOUSAND EIGHT HUNDRED AND THIRTY (1,830) SQUARE METERS, more or less

has been adjudicated and extrajudicially settled by and among his heirs on July 27, 2021 at Las Piñas City before Notary Public Atty. Eddie C. Balazo and entered in his Notarial Register as Doc. No. 48; Page No. 11; Book No. I; Series of 2021.

(Sgd.) **All Heirs (EMERENCIANA V. TORNEROS for herself and as Attorney-in-fact of PAMELA V. TORNEROS-PATULOT)**

Publication: DIYARYO KABITENYO
Dates: August 30, September 6 & 13, 2021

AFFIDAVIT OF SELF-ADJUDICATION

NOTICE is hereby given that the estate of the late **TERESITA LACSON LEGASPI** who died intestate on March 23, 2021 in Taguig City, Metro Manila, consisting of a savings account deposit with the METROPOLITAN BANK AND TRUST COMPANY – AGUINALDO IMUS BRANCH under Dollar Savings Account No. 305-2 30300705-3 with a balance of US$13,855.37 as of July 5, 2021 has been self-adjudicated by her surviving spouse FLAVIANO C. LEGASPI; and for and in consideration of the said release, he hereby expressly and absolutely removes, releases and forever discharges the METROPOLITAN BANK AND TRUST COMPANY, its administrators and assigns and/or any of its officers or employees from any and all claims, suits or actions against the said bank and he hereby undertakes to indemnify the said bank, its officers and assigns for any loss or damage which they may sustain arising out of or in connection with the release in favor of the aforesaid account on August 19, 2021 at the City of Imus, Cavite before Notary Public Atty. Carlos Emmanuel C. Montoya and entered in his Notarial Register as Doc. No. 121; Page No. 65; Book No. XII; Series of 2021.

(Sgd.) **Sole Heir**

Publication: DIYARYO KABITENYO
Dates: August 30, September 6 & 13, 2021

Why do short-lived lung infections lead to long-lasting lung damage?

The deadliest time in a viral respiratory illness sometimes is actually after the virus is cleared from the body. Destructive processes that are set in motion during an infection crest in the weeks after the virus is defeated, leading to organ damage that can cause chronic illness or even death. After an initial bout of COVID-19, for example, some people struggle with persistent cough, difficulty breathing and shortness of breath -- signs of ongoing lung disease.

Researchers at Washington University School of Medicine in St. Louis have found clues to just how lung damage develops in the aftermath of a respiratory infection. Studying mice, they found that infection triggers the expression of a protein called IL-33, which is needed for stem cells in the lung to overgrow into air spaces, and increases mucus production and inflammation in the lung. The findings, published Aug. 24 in the Journal of Clinical Investigation, reveal potential points of intervention to prevent chronic lung damage caused by viral infections.

"Vaccines, antivirals, antibody therapies are all helpful, but they are not a solution for people who are already on the road to progressive disease," said senior author Michael J. Holtzman, MD, the Selma and Herman Seldin Professor of Medicine and a professor of cell biology & physiology. "We've gotten better at taking care of the acute illness due to COVID-19, but what happens after that initial injury phase is still a major obstacle to a better outcome. At this point, we are also faced with tens of millions of people who already had infection, and a high percentage of them are having long-term disease, especially with respiratory symptoms. We don't have a treatment that can correct the problem."

It's long been recognized that acute respiratory infections can lead to chronic lung disease. Children hospitalized with respiratory syncytial virus, for example, are two to four times more likely to develop asthma that persists for long periods, maybe even for a lifetime. How exactly an acute respiratory infection triggers chronic disease, however, is not fully understood, making it difficult to develop therapies to prevent or treat it.

As part of this study, Holtzman and colleagues, including first author Kangyun Wu, PhD, an instructor in medicine, studied mice infected with Sendai virus.

Exposure to tobacco smoke in early life is associated with accelerated biological aging, study finds

Accelerated biological ageing is associated with exposure to tobacco smoke during pregnancy and early childhood, as well as with indoor exposure to black carbon. These are the conclusions of an analysis led by the Barcelona Institute for Global Health (ISGlobal), an institution supported by the "la Caixa" Foundation, the first to evaluate associations between a large number of early-life environmental exposures and epigenetic age in children.

Exposure to environmental factors during pregnancy and early childhood can significantly – and sometimes irreversibly – alter our metabolism and physiology, thereby determining our health status later in life. It can also accelerate the process of biological ageing, which has been associated with a higher risk of metabolic, cardiovascular or neurodegenerative diseases. At the cellular level, ageing is a continuous process that starts early in life, and which can be measured thanks to of epigenetic clocks. Epigenetic clocks use the levels of DNA methylation in certain regions of the genome to infer biological aging of a person.

"The epigenetic clock allows us to assess whether someone's biological age is older or younger than his or her chronological age," explains Mariona Bustamante, ISGlobal researcher and last author of the study. Several studies have shown an association between an acceleration in epigenetic ageing and certain environmental exposures, but most were performed in adults and focusing on single exposures. In this study, the team led by Bustamante investigated for the first time the association between the early-life exposome (83 prenatal exposures and 103 in early childhood) and the epigenetic age of 1,173 children between 6 and 11 years of age from the Human Early Life Exposome (HELIX) project, based on six birth cohorts in six European countries, including Spain, and coordinated by ISGlobal researcher Martine Vrijheid.

After selecting the best suited epigenetic clock for the study and adjusting for multiple factors, the research team found that exposure to maternal tobacco smoke during pregnancy was associated with an acceleration in epigenetic ageing. Regarding the postnatal exposome, the analysis showed association with two exposures: parental smoking and indoors levels of black carbon, an air pollutant which results from the incomplete combustion of fuels (and is indirectly measured by particulate matter absorbance or PMabs).

Intriguingly, two other variables were associated with a slowing in biological ageing: the organic pesticide DMDTP and a persistent organic pollutant (polychlorinated biphenyl-138). "Further research is needed to explain these results, but the former could be due to a higher intake of fruits and vegetables while the latter could be explained by its correlation with body mass index," says Paula de Prado-Bert, first author of the study.

"The positive association between epigenetic age acceleration and exposure to tobacco smoke during pregnancy and early childhood go in line with previous results obtained in the adult population," says Bustamante. The epigenetic modifications could affect pathways involved in inflammation, toxin elimination, and cell cycle, with a subsequent impact on health.

Admittedly, these associations do not prove a causality, but this and future early life exposome studies will help guide health policies to reduce certain environmental exposures and promote a "healthy ageing" from early life stages.

Widespread tumor suppression mechanism stops cancer progression by interfering with cancer cell metabolism

According to a study by The Wistar Institute, the tumor suppressor Parkin, whose levels are reduced in different cancer types, causes acute metabolic and oxidative stress, suppresses mitochondrial trafficking, and blocks tumor cell movement, reducing primary and metastatic tumor growth. These findings, published August 25, 2021 in Science Advances, demonstrate that metabolic and mitochondrial reprogramming, which are well-established hallmarks of tumor progression, act as potent drivers of disease.

"We've known for a century that progression from a small, premalignant lesion to an aggressive tumor and then metastasis is accompanied by changes in metabolism that allow cancer cells to support increased energy demands due to continuous growth and adapt to unfavorable microenvironment conditions," said study lead author Dario C. Altieri, M.D., Wistar president and CEO, director of the Institute's Cancer Center and the Robert & Penny Fox Distinguished Professor. "Our study provides evidence that reprogramming the metabolic and mitochondrial function is a cancer-promoting factor opposed by tumor suppression mechanisms, and we identified one that is relevant to halting several different types of cancer."

Altieri and colleagues studied a gene called Parkin that is altered in Parkinson's disease. Through a degradation mechanism called mitophagy, Parkin was known to protect brain cells by facilitating selective removal of damaged mitochondria, the organelles that produce energy. Previous evidence indicated that Parkin might have a role in regulating cancer cell metabolism and suppressing tumor growth, but the mechanisms remained elusive.

Researchers re-introduced Parkin in prostate cancer cells and other cancer cell types that did not express the protein and observed reduced cell movement and a blocking of invasion. Concordantly, deletion of Parkin in normal cells increased cell motility.

In vivo, Parkin-expressing prostate cancer cells formed smaller tumors and had lower metastatic potential. The team found that Parkin expression was low or undetectable in patient-derived tissue samples and cancer cell lines and decreased in all the tumor types contained in The Cancer Genome Atlas database compared with their respective normal counterpart.

A global proteomic study of cancer cells modified to express Parkin revealed alterations in the protein networks that control cell movement and metastasis and decreased oncogenic signaling.

Importantly, these effects were independent of Parkin's role in mitophagy in response to mitochondrial damage. Researchers then asked whether other pathological conditions could activate Parkin. They found that exposing Parkin-expressing cancer cells to stress conditions such as nutrient deprivation and DNA-damaging agents resulted in a strong increase in Parkin levels.

Parkin functions as an enzyme that promotes ubiquitination, a process that modifies proteins to flag them for degradation. Researchers observed that this function is required for Parkin's tumor suppressive activity. Forced Parkin expression in cancer cells alters ubiquitination in protein networks that control cell death, mitochondrial function and glucose metabolism. As a consequence, Parkin interferes with movement of mitochondria within the cells, which affects their function in tumor progression.

"Our lab has described the role these organelles play in cancer, showing that changes in mitochondrial size, shape and distribution within the cells allow for increased cell motility, metastatic dissemination and other aggressive disease traits," said Ekta Agarwal, Ph.D., first author of the study and a postdoctoral fellow in the Altieri lab.

DIYARYO KABITENYO
Nagmamalasakit sa lalawigan
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Baby detector software embedded in digital camera rivals ECG

University of South Australia researchers have designed a computer vision system that can automatically detect a tiny baby's face in a hospital bed and remotely monitor its vital signs from a digital camera with the same accuracy as an electrocardiogram machine.

Using artificial intelligence-based software to detect human faces is now common with adults, but this is the first time that researchers have developed software to reliably detect a premature baby's face and skin when covered in tubes, clothing, and undergoing phototherapy.

Engineering researchers and a neonatal critical care specialist from UniSA remotely monitored heart and respiratory rates of seven infants in the Neonatal Intensive Care Unit (NICU) at Flinders Medical Centre in Adelaide, using a digital camera.

"Babies in neonatal intensive care can be extra difficult for computers to recognise because their faces and bodies are obscured by tubes and other medical equipment," says UniSA Professor Javaan Chahl, one of the lead researchers.

"Many premature babies are being treated with phototherapy for jaundice, so they are under bright blue lights, which also makes it challenging for computer vision systems."

The 'baby detector' was developed using a dataset of videos of babies in NICU so reliably detect their skin tone and faces.

Vital sign readings matched those of an electrocardiogram (ECG) and in some cases appeared to outperform the conventional electrodes, endorsing the value of non-contact monitoring of pre-term babies in intensive care.

Physical activity in children can be improved through 'exergames'

Physical activity among young people can be improved by well-designed and delivered online interventions such as 'exergames' and smartphone apps, new research shows.

According to a review study carried out at the University of Birmingham, children and young people reacted positively in PE lessons to the use of exergames, which deliver physical activity lessons via games or personalised activities. Changes included increases in physical activity levels, but also improved emotions, attitudes and motivations towards physical activity.

The study, published in Physical Education and Sport Pedagogy is one of the first to examine not only the impact of online interventions on physical behaviours in non-clinical groups of young people but the effects of digital mediums on physical activity knowledge, social development and improving mental health.

The evidence can be used to inform guidance for health and education organisations on how they can design online interventions to reach and engage young people in physical activity.

The authors analysed 26 studies of online interventions for physical activity. They found three main mechanisms at work: gamification, in which participants progress through different levels of achievement; personalisation, in which participants received tailored feedback and rewards based on progress; and information, in which participants received educational material or guidance to encourage behavioural change.

Most of the interventions were focused on gamification or personalisation and the researchers found the majority of studies (70%) reported an increase and/or improvement in outcomes related to physical activity for children and young people who participated in online interventions. Primary school age pupils in particular who participated during PE lessons benefited.

Lead author Dr Victoria Goodyear, in the University of Birmingham's School of Sport, Exercise and Rehabilitation Science, said: "We find convincing evidence that PE teachers can use online learning to boost attitudes and participation in physical activity among young people, particularly at primary school age. There's a real opportunity here for the PE profession to lead the way in designing meaningful and effective online exercise opportunities, as well as an opportunity to embed positive approaches to exercise and online games and apps at an early stage."