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

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

PDEA destroys more than P5-B worth of illegal drugs

TRECE MARTIRES CITY — The Philippine Drug Enforcement Agency (PDEA) destroyed last Jan. 20 more than P5 billion worth of illegal drugs and other paraphernalia at a waste management facility here.

PDEA Director General Wilkins Villanueva said the agency destroyed some P5.36 billion worth of illegal drugs at the waste management facility using thermal decomposition or thermolysis, a method of decomposition or breaking down of chemicals by heat.

Villanueva said

Turn to page 2

Cavite implements curfew anew, imposes restrictions on unvaxxed individuals

The provincial government announced last Jan. 14 the reimplementation of curfew hours as part of its measures to curb the further spread of coronavirus disease (COVID-19).

As per Provincial Ordinance No. 342-2022, curfew hours will be from 10:00 p.m. to 4:00 a.m. of the following day.

In addition, the local government unit (LGU) implemented Provincial Ordinance No. 341-2022 imposing restrictions on individuals who are unvaccinated against COVID-19 whenever the province is under Alert Level 3 or higher.

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(PDEA... from page 1)

there was a delay in the disposal of the seized illegal drugs in their inventory because of the pandemic. "However, dahil nga dito kay COVID-19 na ito, talagang nahihirapan tayo dahil most of the time last year, sarado ang ating mga korte at napipigilan tayo magkaroon ng ocular inspection."

It is the court's responsibility to conduct an ocular inspection of the seized drugs within 72 hours before the PDEA could proceed with the disposal, as stated in the Comprehensive Dangerous Drugs Act of 2002.

Research in mice identifies neurons that control locomotion

For more than a century, scientists have known that while the commands that initiate movement come from the brain, the neurons that control locomotion once movement is underway reside within the spinal cord. In a study published January 20 in the journal Cell, researchers report that, in mice, they have identified one particular type of neuron that is both necessary and sufficient for regulating this type of movement. These neurons are called ventral spinocerebellar tract neurons (VSCTs).

"We hope that our findings will open up new avenues toward understanding how complex behaviors like locomotion come about and give us new insight into the mechanisms and biological principles that control this essential behavior," says the paper's senior author George Mentis, associate professor of pathology and cell biology in the Department of Neurology at Columbia University. "It's also possible that our findings will lead to new ideas for therapeutic avenues, whether they involve treatments for spinal cord injury or neurodegenerative diseases that affect movement and motor control."

VSCTs were discovered in the 1940s, but researchers have long believed that their main function was to relay messages about neuronal activity from the spinal cord to the cerebellum. The new study reports that instead they control locomotor behavior both during development and in adulthood.

"These findings were a huge surprise," Mentis says. "One of the key discoveries in our study was that apart from their connection to the cerebellum, these neurons make connections with other spinal neurons that are also involved in locomotor behavior via their axon collaterals."

The research involved several novel experimental approaches. One part of the research used optogenetics, employing LED light to regulate certain proteins that were expressed selectively in VSCTs to either activate or suppress the neuronal activity.

Mediterranean diet associated with a lower risk of mortality in older adults

A greater adherence to the Mediterranean diet which had been assessed through an index made with biomarkers during a 20-year scientific monitoring is associated with a lower mortality in adults over 65. This is one of the main conclusions of a study led by Cristina Andrés-Lacueva, head of the Research Group on Biomarkers and Nutritional & Food Metabolomics of the Faculty of Pharmacy and Food Sciences of the University of Barcelona (UB) and the CIBER on Fragility and Healthy Ageing (CIBERFES), also formed by the Food Innovation Network of Catalonia (XIA).

The paper, published in the journal BCM Medicine, has been carried out in collaboration with the National Institute on Ageing (NIA) of the United States. According to the conclusions, the analysis of dietary biomarkers in plasma and urine can contribute to the individualized food assessment for old people.

Republic of the Philippines
REGIONAL TRIAL COURT
Fourth Judicial Region
Branch 109
Carmona, Cavite

HOME DEVELOPMENT MUTUAL FUND
Mortgagee,

EJF-2021-22
For: Extra-Judicial Foreclosure of Real Estate Mortgage Under Act No. 3135, as amended by Act. No. 4118

-versus-

MARIO F. BONGANAY married to HELEN GRACE M. BONGANAY,
Mortgagor.

NOTICE OF SHERIFF'S SALE

Upon Extra-Judicial petition for sale under Act No. 3135, as amended by Act 4118 filed by the mortgagee, **HOME DEVELOPMENT MUTUAL FUND,** with postal address at 12th Floor JELP Business Solution Center No. 408 Shaw Boulevard, Mandaluyong City against the mortgagor, **MARIO F. BONGANAY married to HELEN GRACE M. BONGANAY,** with postal address at 1835 ME Carmona, Cupang, Muntinlupa, Metro Manila, and for the satisfaction of the mortgaged duly which as of **November 5, 2021** amounts to **TWO HUNDRED TWENTY NINE THOUSAND THREE HUNDRED NINETY ONE PESOS & 8/100 (PHP229,391.08),** exclusive of all legal fees and expenses incidental to this foreclosure and sale, the undersigned or his duly authorized representative will SELL at public auction on **February 17, 2022** at 1:00 o'clock in the afternoon at the Court Room of Branch 109, Regional Trial Court, Hall of Justice Building, Carmona, Cavite to the highest bidder for CASH or MANAGER'S CHECK, in Philippine currency, the mortgaged property/ies with all the improvements thereon to wit:

TRANSFER CERTIFICATE OF TITLE NO. 057-2013044043

IT IS HEREBY CERTIFIED that certain land situated in BRGY. OF CABILANG BAYBAY (POBLACION 5, NOW), MUN. OF CARMONA (GEN. MARIANO ALVAREZ NOW), PROV. OF CAVITE, bounded and described as follows:

"A PARCEL OF LAND (LOT 7, BLK. 4-C OF THE CONS. AND SUBD. PLAN, PCS-04-029461, BEING A PORTION OF THE CONS. OF LOTS 5, 5, 7, 9, 11, 13, 15, 17, 21 & 25, BLK. 2, LOTS 7 TO 35, BLK. 4, LOTS 1 TO 21 BLK. 5, LOTS 1 TO 15 BLK. 6, LOTS 1 TO 51, BLK. 25 & BLK. 26, ALL OF PSD-04-001080, L.R.C. REC. NO. 41926) SITUATED IN THE BRGY. OF CABILANG BAYBAY (POBLACION 5, NOW), MUN. OF CARMONA (GEN. MARIANO ALVAREZ NOW), PROV. OF CAVITE. BOUNDED ON THE NW., ALONG LINE 1-2 BY LOT 9, BLK. 4-C; ON THE NE., ALONG LINE 2-3 BY RD. LOT 21; ON THE SE., ALONG LINE 3-4 BY LOT 8; ON THE SW., ALONG LINE 4-5 BY LOT 6; ALONG LINE 5-1 BY LOT 8, ALL OF BLK. 4-C, ALL OF THE CONS. & SUBD. PLAN. BEGINNING AT A PT. MARKED "1" ON PLAN, BEING S. 72 DEG. 47'W., 4882.32 M. FROM BLBM NO. 2, CABILANG BAYBAY, CARMONA, CAVITE. THENCE N. 80 DEG. 12'E., 9.00 M. TO PT. 2; THENCE S. 09 DEG. 48'E., 4.44 M. TO PT. 3; THENCE S. 80 DEG. 12'W., 9.00 M. TO PT. 4; THENCE N. 09 DEG. 48'W., 1.42 M. TO PT. 5; THENCE N. 09 DEG. 48'W., 3.02 M. TO THE PT. OF BEGINNING, CONTAINING AN AREA OF FORTY (40) SQUARE METERS. ALL PTS. REFERRED TO ARE INDICATED ON THE PLAN AND ARE MARKED ON THE GROUND BY P.S. CYL. CONC. MONS. 15 X 60 CM; BEARINGS TRUE; DATE OF ORIG. SURVEY: MAY 26-28, 1924 AND THAT OF THE CONS. & SUBD. SURVEY: AUG. 2-20, 2004 AND WAS APPROVED ON NOV. 10, 2004."

xxxNOTHING FOLLOWSxxx

Prospective buyers and/or bidders are hereby directed to investigate for themselves the title of the said property and the encumbrances thereon, if there be any.

All sealed bids must be submitted to the undersigned on the above-stated time and date.

In the event the public auction should not take place on the said date and time, it shall be held on **February 24, 2022** at the same time and place without further notice.

Carmona, Cavite, **January 6, 2022**.

(Sgd.) **BON GERARD D. ASCAÑO**
Clerk of Court VI
& Ex-Officio Sheriff

Prepared by:

(Sgd.) **JOSEPH R. BIOKNO**
Sheriff In-Charge

Copy Furnished:

HOME DEVELOPMENT MUTUAL FUND
12th Floor JELP Business Solution Center
No. 408 Shaw Boulevard, Mandaluyong City

ATTY. SIMEON P. MADRID
S.P. MADRID & ASSOCIATES
Unit 2010 20/F Herrera Tower
V.A. Rufino cor. Valero Sts., Makati City

MARIO F. BONGANAY
m/o to HELEN GRACE M. BONGANAY

1. 1835 ME Carmona, Cupang
   Muntinlupa City
2. Lot 7 Blk. 4-C, GMA Village
   Brgy. Cabilang Baybay (now Poblacion 5)
   Carmona (now GMA), Cavite

Publication : DIYARYO KABITENYO
Dates : January 10, 17 & 24, 2022

EXTRAJUDICIAL SETTLEMENT OF ESTATE OF THE DECEASED SPOUSES REYNALDO M. SAMSON AND LYDIA D. SAMSON AND FELIX M. SAMSON

NOTICE is hereby given that the estate of the deceased **SPOUSES REYNALDO SAMSON SR. and LYDIA DEL ROSARIO** who both died intestate on April 2, 2009 and March 7, 2013, respectively, and **FELIX SAMSON** who died intestate on January 24, 1999, consisting of a parcel of land the deceased Reynaldo M. Samson Sr. married to Lydia del Rosario and Felix M. Samson were the registered co-owners, situated in the Municipality of Dasmarinas, Province of Cavite, Island of Luzon, covered by Transfer Certificate of Title No.T- 81370, containing an area of EIGHTEEN THOUSAND ONE HUNDRED NINETY-TWO (18,192) SQUARE METERS, more or less, has been adjudicated and extrajudicially settled by and among the HEIRS OF REYNALDO M. SAMSON SR. and LYDIA D. SAMSON who became the owner of ½ share of the property by operation of law and HEIRS OF FELIX M. SAMSON who received by operation of law the other half on November 18, 2021 at City of Manila before Notary Public Atty. Jody A. Lardizabal and entered in her Notarial Register as Doc. No. 450; Page No. 92; Book No. 1; Series of 2021.

(Sgd.) **Reynaldo Del Rosario Samson Jr.; Eleanor S. Melo and Edna R. Samson for herself and as Atty-in-fact of Conchita R. Samson, Thelma S. Villanueva, Wennie S. Revestir and Maria Lourdes Antonio-Samson (heir of Donato Samson)**

Publication : DIYARYO KABITENYO
Dates : January 10, 17 & 24, 2022

Babies can tell who has close relationships based on one clue: Saliva

Learning to navigate social relationships is a skill that is critical for surviving in human societies. For babies and young children, that means learning who they can count on to take care of them.

MIT neuroscientists have now identified a specific signal that young children and even babies use to determine whether two people have a strong relationship and a mutual obligation to help each other: whether those two people kiss, share food, or have other interactions that involve sharing saliva.

In a new study, the researchers showed that babies expect people who share saliva to come to one another's aid when one person is in distress, much more so than when people share toys or interact in other ways that do not involve saliva exchange.

AFFIDAVIT OF SELF-ADJUDICATION AS SOLE HEIR

NOTICE is hereby given that the estate of the late **FLORENTINO M. CERRERO** who died intestate on December 19, 2021 at No. 209 L. Moreno Street, Amaya IV, Tanza, Cavite, consisting of bank deposit with Philippine National Bank - Tanza, Cavite branch under the herein below account:

ACCOUNT NAME	SAVING ACCOUNT NO.	BALANCE OF JAN. 19, 2022
FLORENTINA M. CERRERO	240110029065	PHP 65,625.00

has been self-adjudicated by his sole heir RENATO E. CERRERO on January 19, 2022 in the Municipality of Tanza, Cavite, Philippines before Notary Public Atty. Julius B. Arva and entered in his Notarial Register as Doc. No. 232; Page No. 47; Book No. XLI; Series of 2022.

(Sgd.) **Affiant**

Publication : DIYARYO KABITENYO
Dates : January 24, 31 and February 7, 2022

Form 28 (Revised June 2014)

CAVITE UNITED RURAL BANK CORP
Name of Bank

PUBLISHED BALANCED SHEET

(Head Office and Branches)
As of December 31, 2021

CONTROL PROOFLIST

	Account Code	Current Quarter	Previous Quarter
Cash and Cash Items	1080000000000000	5,347,871.90	6,604,284.13
Due from Bangko Sentral ng Pilipinas	1051500000000000	4,050,782.74	4,050,782.74
Due from Other Banks	1052000000000000	83,682,558.02	59,275,585.07
Financial Assets at Fair Value through Profit or Loss	1120000000000000	0.00	0.00
Available-for-Sale Financial Assets-Net	1952000000000000	0.00	0.00
Held-to-Maturity (HTM) Financial Assets-Net	1952500000000000	49,694,323.81	64,531,880.97
Unquoted Debt Securities Classified as Loans-Net	1953000000000000	0.00	0.00
Investments in Non-Marketable Equity Security-Net	1953500000000000	0.00	0.00
Loans and Receivables - Net	1954000000000000	206,255,053.68	219,026,250.50
Other Financial Assets	1480000000000000	27,490,245.33	34,235,829.42
Equity Investment in Subsidiaries, Associates and Joint Ventures-Net	1954525000000000	0.00	0.00
Bank Premises, Furniture, Fixture and Equipment-Net	1955005000000000	20,554,595.24	17,741,393.87
Real and Other Properties Acquired-Net	1955010000000000	6,481,386.97	41,376,633.56
Non-Current Assets Held for Sale	1501500000000000	0.00	0.00
Other Assets-Net	1520000000000000	61,605,512.22	68,675,883.73
Net Due from Head Office/Branches/Agencies, if any (Phil. branch of a foreign bank)	1552500000000000	0.00	0.00
TOTAL ASSETS	1000000000000000	[illegible]	[illegible]
Financial Liabilities at Fair Value through Profit or Loss	2580000000000000	0.00	0.00
Deposit Liabilities	2150000000000000	82,006,807.30	86,015,716.01
Due to Other Banks	2200500000000000	0.00	0.00
Bills Payable	2201000000000000	0.00	0.00
Bonds Payable-Net	2952015000000000	0.00	0.00
Unsecured Subordinated Debt-Net	2952020000000000	0.00	0.00
Redeemable Preferred Shares	2202500000000000	0.00	0.00
Special Time Deposit	2203000000000000	0.00	0.00
Due to Bangko Sentral ng Pilipinas	2303500000000000	0.00	0.00
Other Financial Liabilities	2400500000000000	0.00	0.00
Other Liabilities	2401000000000000	2,638,107.44	4,495,448.91
Net Due to Head Office/Branches/Agencies (Philippine branch of a foreign bank)	2308500000000000	37,783,352.05	37,322,324.89
TOTAL LIABILITIES	2000000000000000	0.00	0.00
TOTAL STOCKHOLDERS' EQUITY	3000000000000000	[illegible]	127,815,403.87
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	9050000000000000	342,734,062.72	387,685,034.18
TOTAL CONTINGENT ACCOUNTS	4000000000000000	[illegible]	[illegible]
ADDITIONAL INFORMATION		1,713.00	1,673.00
Gross total loan portfolio (TLP)	4990200000000000		
Specific allowance for credit losses on the TLP	4993000000000000	172,200,345.84	400,991,805.74
Non-Performing Loans (NPLs)		132,018,984.52	149,741,796.74
a. Gross NPLs	4991005000000000		
b. Ratio of gross NPLs to gross TLP (%)	4991505000000000	201,890,604.42	217,413,169.56
c. Net NPLs	4991010000000000	54.24	54.22
d. Ratio of Net NPLs to gross TLP (%)	4991515000000000	73,471,532.02	77,980,619.53
e. Ratio of total allowance for credit losses to gross NPLs (%)	4991520000000000	19.74	19.45
f. Ratio of specific allowance for credit losses on the gross TLP to gross NPLs (%)		82.20	83.70
Capital Adequacy Ratio (CAR) on Solo Basis, as prescribed under existing regulations		65.39	68.87
a. Total CAR (%)	4996505005000000		
b. Tier 1 Ratio (%)	4996505010000000	43.75	46.18
c. Common Tier 1 Ratio (%) 1/	4996505015000000	43.75	46.18
		43.75	46.18

1/ Common Equity Tier 1 is only applicable to all Universal and Commercial Banks and their subsidiary banks.

I hereby certify that all matters set forth in this Published Balance Sheet are true and correct to the best of my knowledge and belief.

RHUSHEL U. VIGAL
Accounting & HR Head

JEFFRE D. BAGARINAO
Compliance Coordinator

Publication : DIYARYO KABITENYO
Date : January 24-30, 2022

COVID-19 vaccines do not cause infertility, study finds

COVID-19 vaccination in either partner does not appear to affect fertility, according to new research led by Boston University School of Public Health (BUSPH) investigators.

Published in the American Journal of Epidemiology, the prospective study of couples trying to conceive found no association between COVID-19 vaccination and fecundability -- the probability of conception per menstrual cycle -- in female or male partners who received the Pfizer-BioNTech, Moderna, or Johnson & Johnson vaccines.

In contrast, the findings indicate that COVID-19 infection among males may temporarily reduce fertility -- an outcome that could be avoidable through vaccination.

"Many reproductive-aged individuals have cited concerns about fertility as a reason for remaining unvaccinated," says study lead author Dr. Amelia Wesselink, research assistant professor of epidemiology at BUSPH. "Our study shows for the first time that COVID-19 vaccination in either partner is unrelated to fertility among couples trying to conceive through intercourse. Time-to-pregnancy was very similar regardless of vaccination status."

Wesselink and colleagues analyzed survey data on COVID-19 vaccination and infection, and fecundability, among female and male participants in the BUSPH-based Pregnancy Study Online (PRESTO), an ongoing NIH-funded study that enrolls women trying to conceive, and follows them from preconception through six months after delivery. Participants included 2,126 women in the US and Canada who provided information on sociodemographics, lifestyle, medical factors, and characteristics of their partners from December 2020 to September 2021, and the participants were followed in the study through November 2021.

The researchers calculated the per menstrual cycle probability of conception using self-reported dates of participants' last menstrual period, typical menstrual cycle length, and pregnancy status. Fertility rates among female participants who received at least one dose of a vaccine were nearly identical to unvaccinated female participants. Fecundability was also similar for male partners who had received at least one dose of a COVID-19 vaccine compared with unvaccinated male participants. Additional analyses that considered the number of vaccine doses, brand of vaccine, infertility history, occupation, and geographic region also indicated no effect of vaccination on fertility.

While COVID-19 infection was not strongly associated with fertility, men who tested positive for COVID within 60 days of a given cycle had reduced fertility compared to men who never tested positive, or men who tested positive at least 60 days prior. This data supports previous research that has linked COVID-19 infection in men with poor sperm quality and other reproductive dysfunction.

"These data provide reassuring evidence that COVID vaccination in either partner does not affect fertility among couples trying to conceive," says study senior author Dr. Lauren Wise, professor of epidemiology at BUSPH. "The prospective study design, large sample size, and geographically heterogeneous study population are study strengths, as was our control for many variables such as age, socioeconomic status, pre-existing health conditions, occupation, and stress levels."

The new data also help quell concerns about COVID-19 vaccines and fertility that arose from anecdotal reports of females experiencing menstrual cycle changes following vaccination.

Development of a lithium-air battery with an energy density over 500 wh/kg

NIMS and Softbank Corp. have developed a lithium-air battery with an energy density over 500Wh/kg — significantly higher than currently lithium ion batteries. The research team then confirmed that this battery can be charged and discharged at room temperature. In addition, the team found that the battery developed by the team shows the highest energy densities and best cycle life performances ever achieved. These results signify a major step toward the practical use of lithium-air batteries.

Lithium-air batteries have the potential to be the ultimate rechargeable batteries: they are lightweight and high capacity, with theoretical energy densities several times that of currently available lithium ion batteries. Because of these potential advantages, they may find use in a wide range of technologies, such as drones, electric vehicles and household electricity storage systems. NIMS has been carrying out basic research on lithium-air batteries with support from the ALCA-SPRING program (ALCA: Advanced Low Carbon Technology Research and Development Program, SPRING: Specially Promoted Research for Innovative Next Generation Batteries). This program has been funded by the Japan Science and Technology Agency (JST) with the goal of accelerating large-capacity rechargeable battery R&D. In 2018, NIMS and Softbank co-founded the Advanced Technologies Development Center to conduct research with the goal of putting lithium-air batteries into practical use in mobile phone base stations, the Internet of Things (IoT), HAPS (high altitude platform stations) and other technologies. Despite their very high theoretical energy densities, only a small number of lithium-air batteries with high energy densities have actually been fabricated and evaluated. This limited success is attributed to the fact that a large proportion by weight of lithium-air battery contains heavy inactive components (e.g., separators and electrolytes) that do not directly participate in actual battery reactions.

This research team had previously developed original battery materials that significantly increase the performance of lithium-air batteries in ALCA-SPRING-supported research. The team then developed a technique to fabricate high-energy-density lithium-air cells at the NIMS-SoftBank Advanced Technologies Development Center. Finally, the team created a new lithium-air battery by combining these new materials and the fabrication techniques. The developed battery exhibited the energy density over 500 Wh/kg -- substantially higher than currently lithium ion batteries. Notably, the repeated discharge and charge reaction proceeds at room temperature. The energy density and cycle life performance of this battery are among the highest ever achieved.

The team is currently developing higher-performance battery materials and plans to integrate them into the newly developed lithium-air battery with the aim of greatly increasing the battery's cycle life. The team then plans to expedite efforts to put the battery into practical use at the NIMS-SoftBank Advanced Technologies Development Center.

This project was carried out by a research team led by Shoichi Matsuda (Senior Researcher, NIMS), Manai Ono (Postdoctoral Researcher, NIMS), Shoji Yamaguchi (Specialist Staff, NIMS) and Kohei Uosaki (Research Fellow, NIMS; also Director, NIMS-SoftBank Advanced Technologies Development Center). This work was mainly supported by the JST ALCA-SPRING program and the NIMS-SoftBank Advanced Technologies Development Center.

TV watching linked with potentially fatal blood clots

Take breaks when binge-watching TV to avoid blood clots, say scientists. The warning comes as a study reports that watching TV for four hours a day or more is associated with a 35% higher risk of blood clots compared with fewer than 2.5 hours. The research is published January 19, 2022 in the European Journal of Preventive Cardiology, a journal of the ESC.

"Our study findings also suggested that being physically active does not eliminate the increased risk of blood clots associated with prolonged TV watching," said lead author Dr. Setor Kunutsor of the University of Bristol, UK. "If you are going to binge on TV you need to take breaks. You can stand and stretch every 30 minutes or use a stationary bike. And avoid combining television with unhealthy snacking."

The study examined the association between TV viewing and venous thromboembolism (VTE). VTE includes pulmonary embolism (blood clot in the lungs) and deep vein thrombosis (blood clot in a deep vein, usually the legs, which can travel to the lungs and cause pulmonary embolism).

To conduct the study, the researchers conducted a systematic review to collect the available published evidence on the topic and then combined the results using a process called meta-analysis. "Combining multiple studies in a meta-analysis provides a larger sample and makes the results more precise and reliable than the findings of an individual study," explained Dr. Kunutsor.

The analysis included three studies with a total of 131,421 participants aged 40 years and older without pre-existing VTE. The amount of time spent watching TV was assessed by questionnaire and participants were categorised as prolonged viewers (watching TV at least four hours per day) and never/seldom viewers (watching TV less than 2.5 hours per day).

The average duration of follow-up in the three studies ranged from 5.1 to 19.8 years. During this period, 964 participants developed VTE. The researchers analysed the relative risk of developing VTE in prolonged versus never/seldom TV watchers. They found that prolonged viewers were 1.35 times more likely to develop VTE compared to never/seldom viewers.

The association was independent of age, sex, body mass index (BMI) and physical activity. "All three studies adjusted for these factors since they are strongly related to the risk of VTE; for instance, older age, higher BMI and physical inactivity are linked with an increased risk of VTE," said Dr. Kunutsor. "The findings indicate that regardless of physical activity, your BMI, how old you are and your gender, watching many hours of television is a risky activity with regards to developing blood clots."

Dr. Kunutsor noted that the findings are based on observational studies and do not prove that extended TV watching causes blood clots.

Regarding the possible reasons for the observed relationship, he said: "Prolonged TV viewing involves immobilisation which is a risk factor for VTE. This is why people are encouraged to move around after surgery or during a long-haul flight. In addition, when you sit in a cramped position for long periods, blood pools in your extremities rather than circulating and this can cause blood clots. Finally, binge-watchers tend to eat unhealthy snacks which may lead to obesity and high blood pressure which both raise the likelihood of blood clots."

Dr. Kunutsor concluded: "Our results suggest that we should limit the time we spend in front of the television. Long periods of TV watching should be interspersed with movement to keep the circulation going. Generally speaking, if you sit a lot in your daily life – for example your work involves sitting for hours at a computer – be sure to get up and move around from time to time."

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KABITENYO
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Dementia: How to prevent cognitive decline

Physical activity, nutrition and cognitively stimulating activities are all known to be good ways to prevent Alzheimer's disease and dementia. And older adults at risk can access a variety of lifestyle services to that end, including diet regimes and exercises for their body and mind.

Now an international team of researchers led by Université de Montréal psychology professor Sylvie Belleville has determined how many of those intervention sessions are needed prevent cognitive decline in people at risk: only about a dozen.

Published in Alzheimer's & Dementia : The Journal of the Alzheimer's Association, the study by Dr. Belleville and colleagues at the universities of Toulouse and Helsinki show that 12 to 14 sessions are all that's were needed to observe an improvement in cognition. Until now, the number of sessions or "doses" needed for optimal effect has been unknown.

"In pharmacological studies, every effort is made to define an optimal treatment dose needed to observe the expected effects, " said Belleville, a neuropsychologist and researcher at the research centere of the UdeM-affiliated Institut universitaire de gériatrie de Montréal. "This is rarely done in non-pharmacological studies, especially those on the prevention of cognitive decline, where little information is available to identify this dose.

"Defining an optimal number of treatment sessions is therefore crucial.," she continued.

Antifreeze cream prevents frostbite injuries to skin, study suggests

Skiers, hikers, soldiers and others exposed to extreme cold temperatures can experience frostbite – a painful injury that occurs when ice crystals form in the skin. Many extremely cold areas are also remote, and delays in frostbite treatment can result in severe wounds, scarring and even limb amputation. Now, researchers reporting in ACS Applied Biomaterials have developed a cream that prevents frostbite injuries in mice when applied to the skin 15 minutes before severe cold exposure.

Frostbite not only kills skin cells, but can also harm deeper tissues like muscle and bone, sometimes causing secondary infections and permanent nerve damage. Common therapies, such as rapid rewarming of the affected limb, aim to reverse tissue freezing, but by the time of treatment, many cells have already died. Recently, scientists have developed frostbite prevention strategies, such as electric heaters sewn into clothing or transgenic antifreeze proteins, but such approaches are often costly, impractical or have safety concerns. Therefore, Munia Ganguli and colleagues wanted to test the frostbite prevention properties of a combination of synthetic molecules commonly used in labs to cryopreserve cells. Dimethyl sulfoxide (DMSO) keeps ice crystals from forming inside cells, whereas poly(vinyl alcohol) (PVA) prevents ice crystals in the spaces between cells, which can damage membranes.

The researchers first tested the ability of different amounts of DMSO and PVA, alone or in combination, to prevent the death of cultured cells in a dish that were exposed to a freezing temperature. They found that 2% DMSO combined with 1.6 mg/mL PVA yielded the highest cell survival (about 80%), while protecting the cell membrane and cytoskeleton. This combination, which the researchers called SynAFP, also allowed cells to divide and express proteins more normally after cold stress. Then, the team mixed SynAFP with a commercial aloe vera cream and applied it to the skin of mice 15 minutes before a cold challenge. The cream reduced frostbite wound size, tissue damage and inflammation, and sped healing, compared with no treatment. The cream did not prevent frostbite when applied 30 minutes or more before the cold challenge; however, multiple applications did not damage skin. The effects of the antifreeze cream in people, and how frequently it needs to be reapplied, must still be determined, the researchers say.