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CBAS Students Shine at 2021 College Exhibition

INSIDE THIS ISSUE:

Dr. Edwin A. Ofudje (Ag. Dean CBAS—1st from left), Prof. Elijah A. Ayolabi (Vice Chancellor - 3rd from left), Mr. Femi Oyewole (Registrar– 5th from left), with some students and lecturers of the college at the end of the 2021 CBAS Exhibition

Thursday, 9th of September, 2021 was a memorable day in the College of Basic and Applied Sciences as some students distinguished themselves by exhibiting their creativity to showcase what they have learnt during their four or five years sojourn in the University. Four departments were represented including Computer Science and Mathematics, Physics, Biological Sciences, and Food Science and Technology. Thirteen students from these departments made the College proud. The details of their project exhibition and the Vice-Chancellor's comments are given in the paragraphs below.

Olaiya Oreoluwa Onyekachi developed a project titled **"A QR Code-Based Identity Management System for Monitoring MTU Hostel Residence"**. It is an application that could be used by hostel porters to monitor the movement of MTU students in and out of their respective hostels. The project was aimed at solving the problem facing hostel porters regarding effective monitoring and accountability of MTU students' movement in and out of their respective hostels. The identity management system is composed of a web-based application

that can be accessed by a web-browser on either a desktop computer or laptop. This can be used for the registration of students allocated to various hostels following which a hostel identity card is generated which contains a QR-code which is unique to each student. The system is also composed of a mobile application which can be installed on any android OS-powered smartphone. The hostel porter could use their smartphone to scan the QR-code on the ID card of each student upon entering or departing the hostel. Upon successful scan, the records of the students within and outside the hostels alongside their respective time

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could be easily monitored on the web-browser via a desktop computer or laptop by the head porter. The system will also help the porters to verify the presence of students within the hostel especially upon request by parents or staff of MTU and also eliminate the challenge of moving from one room to the other in the hostel for the purpose of head-counts. The VC, Professor Elijah Ayolabi, rated this presentation as the best. The presenter was able to identify a problem and proffer a solution to it. He noted that the system will be adopted for immediate use in the forthcoming semester. He also pointed out that a future improvement should enable an automated system without human intervention.

Adeoti Faith Steven's project caption is **"An Online Reporting System for Facilitating the Analysis of Student Academic Record".** The application could aid academic staff of MTU to assess the relative performance of students based on their academic records. It is aimed at solving the problem of the summarization and interpretation of students' academic records by decision-makers such as course coordinators, examination officers, HODs, and members of senate using visual representations. The online reporting system is a web-based application that could be assessed using a web-browser installed on a desktop computer or laptop. The system provides a means for registering all users who have authorization to access uploaded results alongside registration of lecturer taking courses in a currently running session. Student academic records across all courses will be transferred from MTU results' portal following upload of marksheet and they could be viewed as graphs and charts. Also, all forms of amendments made on results could be viewed at the instance of upload without having to transfer files from one party to another. The system uses charts to display the status of students (on good standing, probation, warning or withdrawal) across departments and across levels alongside the relative performance of students across their various courses taken. In addition, it provides a module that aids lecturers to assess students via an e-quiz. After grading the quiz, the system could help the lecturer to identify challenging topics thereby allowing the lecturer to review such topics with students in the classroom. The Vice-Chancellor remarked that it is a good project although it requires better presentation. He also stated the need for improvement such as "Time out function". The VC approved that the author and his supervisor Mr. Jeremiah Balogun should interact with the database at ICT in order to port information from ICT to the system.

Olujulo Oluwatomiwa developed a software, **"An Online Doctor Appointment Booking System for Mountain Top University Health Centre"**. The App could help students and staff of Mountain Top University to book appointments with doctors at the health centre. The system was aimed at solving the challenge of crowd control in the health centre alongside a reduction of waiting time for doctor's attention to outpatients. It is a mobile-based application that could be installed on either android-OS or iOS powered smartphones. Using the system, nurses are able to register staff and students of MTU in order for them to be able to access the system from their respective smartphones. The staff or student can book an appointment with a doctor by selecting the date and time of appointment and then submitting their request. Upon successful submission, the nurses will receive the requests made and allocate a doctor if available on the requested time otherwise decline the requested appointment if no doctor is available on the requested time. If the appointment booked is successful, the confirmation of appointment will be received by the staff or student and the doctor will also be notified of the upcoming appointment. Upon visiting the hospital, all medical records can be easily uploaded onto the system by the nurse and the doctor following examination of the patient. Future appointments can also be booked by the doctor, if need be, following examination of the patient. The system will make the storage and retrieval

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of patient's medical information easier and more organized thus eliminating the challenges caused by the paper-based system. The VC also commended the work and stated that further improvement on emergency cases should be factored into the system.

Andrew Samuel built an application titled **"The Utilization of blockchain in building a decentralized voting system"**. A decentralized voting system that would be used to conduct elections so as to proffer solutions to some of the problems present in the existing e-voting systems. These problems include lack of accountability, poor security and lack of confidence in the system and the result. Andrew developed the system using a reuse-oriented process model. The system was developed using solidity programming language, javascript programming language, Html and CSS scripting, and styling languages in a javascript front-end framework (Nextjs) to enable server-side rendering. When implementing the project, a ganache local server was used as well as test accounts and private keys to enable connection with the metamask extension on the browser. The system was taken through series of test cases and the remix online Independent Development Environment (IDE) was used to develop and test the smart contract. Javascript testing library mocha was used in defining more of the functionality and functions in the contract. According to the authors, the primary aim of adding blockchain to the existing electronic voting systems is to increase trust in the system, and to aid the security process of the application. At the end of his presentation, the VC commended him and remarked that it needed further study regarding the usage.

Oyedemi King David designed and implemented an **"Automated Gate System Using RFID Technology".** The project is geared towards the design and implementation of an automated gate model with RFID authorization for access. King David identified the drawback in traditional gate systems often manually operated which may not automatically restrict unauthorized access. The microcontroller is connected to the RFID reader via jumper cables, the LED and servo motors also connect to the microcontroller all being held together by the vero board which provides electrical connection between the microcontroller and components on the vero board. A python IDE was deployed to create the underlying code script which activates the RFID reader and enables the microcontroller interpret signals and execute necessary actions. SQlite database was employed to handle access authorizations, HTML provides a web interface to view database items. He implemented the system with the RFD correctly distinguishing a valid RFID tag from an invalid one and the action of the servo motor indicated the gate opening and closing when a valid RFID tag was authenticated. KingDavid recommended that the system's authentication process could be enhanced using biometric. renewable energy sources such as sunlight through solar panels and wind via wind turbines could be integrated to provide power backup in case of electric power outage. The VC commended the good work and its presentation. However, he mentioned the need to integrate biometric to ensure a two-factor authentication. The VC also requested that the author return after four weeks upon incorporating the biometric for another exhibition and possible adoption for MTU.

Olowo Ebunoluwa's project topic is **"Data Warehousing for Small Scale Businesses"**. He identified the challenge of traditional data storage options and spreadsheets for organization which breeds poor data management and high inconsistency. According to Olowo, having a unified storage for the data sources cannot be done traditionally; it might also prevent poor record keeping and poor decision support. Therefore, he decided to embark on a project that could provide a generic data warehousing solution for any small-scale business. He engaged in diverse requirement specification and analysis before imple-

mentation. A star schema was used for the design, and implemented with Microsoft Server Management Studio and Server Query Language SQL. Data was loaded into the data warehouse using the SQL Server Integration Services Package in Microsoft Visual Studio. Data reporting was done with Microsoft Power BI. Olowo recommended that a formal structure for designing data warehouses should be considered and the data warehouse performance should be enhanced further to accommodate user's desire. A graphical user interface, preferably mobile should be developed to allow better usability for business owners. The VC commended the work. However, he stated that there is need for clarity on the purpose of the data.

From the Physic department, **Okuboyejo Adebolanle Oluwaseyi,** presented "**Construction of a Wireless Gesture-Controlled Robotic Car".** He designed and implemented a battery-powered robotic car whose movements could be controlled using an android device using some components and a programming software. The android device with the aid of an application, takes the readings of the gyroscope sensor, a sensor embedded in most android devices capable of measuring the angular velocity of an object. This app takes different readings in respect to the tilting of the device and sends the readings to a micro-controller called the NODE MCU through a Wi-Fi network. The Node MCU connects to the device's hotspot through its Wi-Fi module and interprets the received signals according to the set of codes programmed into it using an Arduino IDE software. After interpreting the readings, it sends high and low voltages to the Motor driver which controls the motors in the direction the android device is being tilted. The robotic car moves forward and backward when the device is tilted downward and upward respectively, and changes direction to the right or left when the device is tilted to the right or left respectively. The VC applauded the work with recommendations including, the need to improve on the response time and make it vectorial. Also, that the tyre and the motor controls also need improvement. The student should also come for another presentation upon implementing the recommendations.

Okuboyejo Adebolanle O. and his Wireless Gesture-Controlled Robotic Car

From Biochemistry programme, Department of Biological Sciences, **Folakemi Olujimi Omolara** presented a project titled, **"Regulation of Reproductive Disorders Associated with Letrozole-Induced Polycystic Ovarian Syndrome by Ethanolic Extract of *Parquetina nigrescens* Leaves: An *In vivo*, *In vitro* and *In silico* Study"** According to the author, Polycystic ovarian syndrome is a common endocrine disorder that affects women of reproductive age. Ethno medicine has been the basis of medical treatments through much of human history. She stated that *Parquetina nigrescens* is an example of a medicinal plant with various therapeutic effects including treatment of menstrual disorders. Folakemi's study investigated the effect of *Parquetina nigrescens* in the regulation of letrozole-induced PCOS by exploring the three experimental designs: *in vitro*, which evaluated the phytochemical constituents in ethanolic extract of *Parquetina nigrescens* leaves via phytochemical screening, UV-Visible Spectroscopy and GC-MS, *in vivo* was used to evaluate the reproductive hormones, oestrous cycle and the metabolic disorders associated with PCOS, *in silico*, evaluated the inhibitory activity of ethanolic extract of *Parquetina nigrescens* leaves. Her study considers twenty female Wistar rats and randomised them into five groups of four animals. After the induction of letrozole (1mg/kg/day), normal (n=4), and PCOS (n=15; dis-

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tributed into 4 groups of 4 animals/group) rats were treated orally for 14 days with distilled water (1m/kg/day) clomiphene citrate (2mg/kg/day), metformin (500mg/kg/day), and ethanolic extract of P. nigrescens (50 and 100mg). Oestrous cyclicity, body weight and fasting blood glucose levels were measured. These rats were induced with PCOS which was characterised by irregular oestrous cyclicity, elevated ($p>0.05$) triglycerides, low density lipoprotein cholesterol (LDL), total cholesterol, insulin, testosterone, and luteinising hormone concentration (LH). Low ($p>0.05$) progesterone, follicle stimulating hormone (FSH), high density lipoprotein cholesterol (HDL) and fasting blood glucose concentration compared to that of the control group. PCOS rats had altered oestrous cycle compared to that of the control. These reproductive, biochemical and structural alterations were alleviated by the administration of ethanolic extract of P. nigrescens leaves (50mg/kg) restored the oestrous cycle after 14 days of treatment. However, the ethanolic extracts of P. nigrescens (100mg/kg) significantly increased ($p>0.05$) FSH, HDL and progesterone concentrations, but decreased the LH, progesterone, and total cholesterol. Ethanolic extracts of P. nigrescens leaves regulated the reproductive, hormonal and structural alterations of PCOS rats. Bioactive compounds such as oleic acid which is present on the ethanolic extract of Parquetina nigrescens leaves was discovered to have greater binding affinity for phosphoenolpyruvate carboxykinase (PEPCK) than that of metformin making oleic acid a more active ligand in the inhibitory activity of the enzyme PEPCK hence regulating the process of gluconeogenesis. The VC commended the author on her presentation and confidence. However, he mentioned the need for more experiments to substantiate the findings of the work.

Food Science and Technology (FST) department was not left out in the college project exhibition. **Obiwusi Oluwatunbosun** presented a project captioned **"Phytochemical Profile (Characterisation) of *Celosia argentia*, *Amaranthus hybridus* and *Telfaria occidentalis* and their Effects on Induced Hyperlipidemia in Wistar Rats".** According to the author, in Nigeria, twelve million persons were estimated to be obese by 2020, with the prevalence of obesity being significantly greater among women. Being a medical disorder, it is associated with metabolic dysfunction. Overweight people tend to develop a resistance to insulin -- a hormone that regulates blood sugar levels. Leafy vegetable in general have been reported to show therapeutic effect in annulling the comorbidities associated with hyperlipidemia which refers to a group of inherited and acquired illnesses in which the body's lipid levels are abnormally high. This study was therefore aimed at evaluating the ameliorative effect of diets formulated with three different leafy vegetables (*Telfairia occidentalis, Celosia argentia and Amaranthus hybridus*) on hyperlipidemia, a metabolic dysfunction associated with induced obesity in female wistar rats. The phytoconstituents of the vegetables were quantified and the active compounds were identified with GC-MS. Thirty-five female rats were completely randomized into 7 groups (I – VII), with three treatment groups, normal feed as the negative control and a reference drug as the positive control. Effect of continued feeding with high-fat-diet was also observed. All the vegetable based formulated diets had significant effect on weight loss. However, *Telfairia occidentalis* had the highest significant effect on weight loss and reproductive hormone. Drug had a significant regression in the serum level compared to other treatments; there was significant decrease in HFD+ugwu. In conclusion, the formulated feeds had an ameliorative effect on metabolic dysfunctions associated with hyperlipidemia in rats and can therefore be explored in the management of obesity and other diseases related to it. The VC applauded the work. He also stated need to differentiate it from what is publicly available in the market.

Also from Food Science and Technology Department, **Essien Edwin**, presented a project titled **"Nutritional, Physicochemical, Microbiological**

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and Sensory Characteristics of Yoghurt Produced with Imitation Milk for Lactose Intolerant Persons". He stated that lactose intolerance is a common digestive issue in which the body is unable to digest lactose, a type of sugar found primarily in milk and dairy products. Lactose intolerance is common around the world, and patients usually avoid milk and dairy products to alleviate symptoms. Yoghurts were produced from imitation milk of plant sources; Almond, Coconut and Tiger nut while cow milk yoghurt served as the control. According to the authors, the research work aimed at quantifying the nutritional characteristics (proximate composition and mineral profile) of the yoghurts. Physicochemical, microbial and sensory assessments were also carried out on all four samples. The acceptability of these imitation milk yoghurts was judged by two sets of panelists; lactose intolerant people and people who consume milk. The results obtained were statistically analyzed and discussed. The findings showed that sample BYN (Cow milk yoghurt) had the highest ash and carbohydrate contents (2.33±1.00% and 12.19±0.73% respectively). RYN (Coconut milk yoghurt) had the highest fat content (12.37±1.26%) while XYN (Tiger nut milk yogurt) had the highest protein and lowest fat (1.48±0.33% and 5.18±0.0.72%) contents. PYN (Almond milk yoghurt) had the lowest protein content (0.55±0.02%). The mineral profile of BYN showed to be the highest in Ca (0.25%). All the imitation milk yoghurts were found to have higher amounts of manganese, iron and copper than BYN; with PYN having the highest values for the three minerals (4.89, 13.90 and 2.24 respectively). RYN had highest Zn (6.35ppm) followed by BYN (5.90ppm) then XYN and PYN had (4.37ppm and 4.43ppm) respectively. The lactose intolerant panelists preferred the sweetened coconut yoghurt (RYS) which had the highest score for acceptability and was significantly different ($p<0.05$) from the rest. A good work and well-presented according to the VC. He also mentioned the need for further study to identify the best among all the products.

Akuwudike Ifeoma Esther also of FST department presented a project titled, "**Nutritional, Physicochemical, Microbiological and Sensory Evaluation of Yoghurt Enriched with Malted Pennisetum glaucum, *Telfairia occidentalis* and Glycine max".** The presenter mentioned that anaemia caused by a reduction in red blood cell formation or a lack of iron in the body reserve is prevalently a nutritional disease in the world. Yoghurt, traditionally produced with cow milk has relatively low iron content. Yoghurt is currently being utilized to offer nutritious components to people's diets. This study centered on the enrichment of cow milk yoghurt with malted pearl millet, fluted pumpkin leaves and soybeans. Samples were prepared in proportions of cow milk to enrichment sources thus: 70:30, 60:40 and 50:50 for soybeans and malted pearl millet and 95:5, 90:10 and 85:15 for fluted pumpkin. The proximate, mineral, physicochemical, microbial and sensory properties of the products were evaluated and the data obtained from the results were analyzed and estimated with Analysis of variance (ANOVA). The moisture, protein, fat, ash and carbohydrate content ranged from 86.56 to 80.74%, 3.39 to 8.79%, 2.20 to 3.60%, 0.14 to 0.99% and 2.60 to 10.88% respectively. P, Ca, and K content ranged from 0.08 to 0.1%, Mg ranged from 0.02 to 0.1%, Na ranged from 17.15 to 22.01ppm, Mn ranged from 0.35 to 3.91ppm, Cu ranged from 0.23 to 1.18ppm, Zn ranged from 3.73 to 6.04ppm, and Fe ranged from 1.15 to 7.79ppm. The total titratable acidity, total solid, Solid-Not-Fat and pH ranged from 0.98 to 1.45%, 13.43 to 19.25%, 10.38 to 15.65% and 4.25 to 4.41 respectively. The sample that had the highest lactobacillus count was a soybean enriched yoghurt (3.56×CFU/ml) and the sample with the lowest lactobacillus count was a malted pearl millet enriched yoghurt sample (1.00× CFU/ml). The fluted pumpkin enriched yoghurt sample was the most preferred by the sensory panelists. Soybeans enriched yoghurt had the best nutritional profile. Yoghurt enriched with plant-based sources has potential benefits in nutrition-

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al quality improvement for human health. The VC commended this project also. However, he remarked that further studies are needed on how it can help sickle cell anemia patients.

Another project from FST by **Nicholas Chelsea Ginikachukwu**, titled "**Nutritional, Physicochemical, Microbial and Sensory Analysis of Composite Foodspreads Produced from Persea americana and Arachis hypogea Plants".** The authors stated that Avocado (Persea americana) fruit deteriorates rapidly after harvest and this necessitated the implementation of this project. The objective of this project was centred around two accomplishments, i) to salvage the wastage of avocado fruits by enriching peanut butter with fresh avocado pulp, and ii) to provide a healthful option of fat-based foodspread containing monosaturated and polyunsaturated fats opposed to saturated and trans fats rampant in the widely consumed contemporary foodspreads. Arachis hypogea (groundnuts) have high amount of oleic and linoleic fatty acid profile that accounts for about 75 to 80% of the total oil it contains. The nutritional, physicochemical, microbiological, and sensory properties of peanut butter fortified with Avocado pear fruit were analysed in this study. Peanut butter and avocado paste were substituted at varying ratios of 100:0, 80:20, 70:30, 50:50 and 0:100. Studies on the proximate composition, mineral constituents, and sensory evaluation revealed that fortifying groundnuts with Avocado significantly increased its fat content from 25% to 52.6% and 47.9% for 20g and 30g of avocado pulp respectively. Addition of avocado pulp significantly increased the fibre content of peanut butter from 2.8% to 4.5 and 3.85% for 20g and 30g of avocado pulp respectively. Most importantly, the fortified samples showed significant increase in % ash content from 0.87% to 1.9%, 1.61% and 1.42% for 20g, 30g and 50g of avocado pulp respectively, as compared with the standard sample, indicating that the avocado enriched food spread contains appreciable levels of mineral composition and could be used to supplement the daily energy intake of consumers. The composite spreads also possessed more Na and Cu than the standard sample and had a higher score for mouthfeel by the sensory panellists. The aforementioned results show that traditional peanut butter food spread could be substituted with peanut avocado composite food spread up to 20% in edible, spreadable food spread production.

Adeoti Oluwatunmise Doborah and Moses Mercy both also of FST department presented a project titled, "**Development, Evaluation and *In-Vivo* Studies of Dough Meal and Cookies from Plantain, Defatted Sesame and Rice Bran Flour".** According to the authors, the study attempts to proffer solution to the problem of malnutrition by incorporating nutrient-dense and less utilised sesame into plantain flour. It could be useful to a widely available agro-industrial-based waste (rice bran), offers health benefits. The study stated that incorporating the three blends of flour offer a synergistic advantage resulting in development of functional dough meal with potential health benefit in management of diabetes and high blood pressure. Also, it could be useful in managing these diseases, thereby overcoming the side effects of orthodox drugs. In addition to all these, development of cookies from the flour blend will offer an alternative to those suffering from celiac disease (inability to digest wheat). The VC said that it is a good work and well presented. Though there is the need for costing and to differentiate it from the regular market plantain.

At the end of the exhibition, the VC challenged all the audience including the staff that it is high time they found a balance between "book" and "bank". There is need to embark on research that would solve problem thereby bringing cash return. The slogan was "project yourself out of poverty". The occasion was graced by the Registrar, the Deans and lecturers from various departments. The Acting Dean, College of Basic and Applied Sciences (CBAS) in his closing remark noted that though this is the first of its kind, it is just a tip of the iceberg. Better things are yet to come. He also appreciated everyone present at the event.

Nutrition in the Elderly

Nutrition is an important determinant of health in persons over the age of 65. Malnutrition in the elderly is often under-diagnosed. Proper diet and a healthy life go hand in hand, especially for older adults over the age of 65. According to reports by World Health Organization (WHO), a majority of the diseases that older people suffer is as a result of lack of proper diet.

For instance, fat in food is linked to cancer of the prostate, colon, and pancreas. Degenerative diseases such as osteoporosis and diabetes are also diet-related, more specifically with micronutrients. Micronutrients deficiency is shared among the elderly due to factors such as reduced food intake and lack of variety in their diet.

The process of ageing affects other nutrient needs. For example, while requirements for some nutrients may reduce, some data suggest that requirements for other essential nutrients may in fact rise in later life. The process of ageing also affects/impairs virtually all systems in the body, many of these systems are slowed down while some might be shut down totally in the later life.

Age-Related Challenges that Hinder Proper Nutrition;

Decreased Sensitivity

As one ages, senses become numbed down; it therefore takes more energy and time to trigger a stimulus. There is marked decrease in senses of smell and taste which lead to reduced appetite. In some cases, there may be difficulty in differentiating fresh food from stale food since senses are compromised. This, without any doubt, would be detrimental to health.

Medication Side Effects

Most times, vast majority of the elderly are placed on routine medications which may have side effects such as nausea, reduced appetite, and change food tastes perceptions. In this case, the side effects can discourage one from eating, and one ends up skipping meals.

Poor Dental Health

Dental issues such as missing teeth, receding gums that cause teeth to be shaky, mouth sores, and jaw pain are common among older people. All these factors make chewing painful and uncomfortable, hence reducing the likelihood of taking healthy foods among seniors.

Lack of Finances

Older people have limited resources and worry more about money. They may, therefore, cut back on groceries and buy cheaper food, which, in most cases, is less nutritious. This lifestyle can result in many nutritional deficiencies.

Physical Difficulty

Seniors become weaker with age, especially when dealing with conditions like arthritis and disability. Pain and poor physical strength can make simple tasks appear to be challenging. Performing basic functions like standing for long while cooking, carrying groceries, or even peeling a fruit may become daunting tasks.

Memory Loss

Memory loss, dementia, and Alzheimer's disease are fairly typical among seniors. A senior may forget to follow their recommended meal program or skip a meal or even forget to buy food from the store. This poses a nutritional challenge.

Healthy Food Choices

Let us look at foods that are good for elderly people. Begin with the basics. By this, I mean have a balanced meal, or elderly nutrition program, which constitutes:

Carbohydrate-rich foods like sweet potatoes and rice

Protein-rich foods like beans

Fruits and vegetables (five portions a day). Besides

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this, meals rich in the following nutrients are important:

Foods High in Omega-3 Fatty Acids

These fatty acids are important for people of all ages including elderly people as they help prevent inflammation which can cause cancer, rheumatoid, arthritis, and heart disease.

It has also been found to slow down the progression of age-related Macular Degeneration (AMD) —a condition that leads to poor vision. Recent evidence has shown that these fatty acids can reduce the risk of Alzheimer's disease and keep the brain alert.

Nutritionists recommend a serving of omega-3 fatty acids twice a week. Supplements are also available. They can be found in fish mainly sardines, Tuna, Mackerel, and Salmon. They are also found in soybeans, canola oil, and walnuts.

Foods Rich in Calcium

Calcium helps body build and maintain healthy bones. It has also been known to lower blood pressure. Unfortunately, surveys have shown that older people consume less calcium. The body's need for calcium is so essential that, if the body is not getting enough calcium, it begins to reabsorb it from the bones. This makes bones to be fragile and brittle leading to osteoporosis.

Foods rich in Calcium are mainly dairy products such as milk, yogurt, and cheese, as well as in leafy green vegetables and cereals fortified with calcium.

The World Health Organization recommends that people aged above the age of 50 consume 1200 mg of calcium daily. This translates to 4 cups of fortified orange juice, milk, soy, or almond milk.

In some individuals, it might be difficult for body to absorb this much calcium daily through diet, in which case it can be taken as a supplement.

Foods Rich in Fiber

Digestive system slows down with age, the walls of the gastrointestinal tract thicken and the contractions are slower and fewer which may lead to constipation. Foods rich in fiber promote proper digestion by moving food through the digestive tract. These foods have also been known to reduce the risk of heart disease.

Sources; nuts, wholegrain cereal, wholegrain bread and pasta, rice, brown bread, fruits, and vegetables.

Water

According to a pyramid for older adults created by researchers from Tufts University, drinking eight glasses of water daily was next to physical activity in importance to health. As age advances, body's ability to conserve water decreases, so one doesn't feel thirsty as often. However, body still needs water. Dehydration causes drowsiness and confusion among other side effects so it is essential to stay hydrated.

The surest way to check for dehydration is to observe urine. If it is light and transparent means the individual is well-hydrated, if it is dark or bright yellow and cloudy that is a sign of dehydration.

N.B; There is an exception for seniors with kidney or liver disease.

Foods Rich in Iron

Iron plays a vital role in the body. It produces hemoglobin which carries oxygen in the blood from the lungs to the rest of the body. When one is not consuming enough iron, there's a limited supply of oxygen to the body tissues. This results in feeling tired and lethargic. Iron deficiency is known as anemia.

Foods Rich in Vitamin C

Vitamin C has antioxidant properties which are believed to prevent cancer and heart disease. It is also involved in the production of collagen, which gives your skin elasticity and gets rid of dead skin cells healthy skin.

It also helps repair bones and teeth and aids in healing wounds. This essential vitamin can be found in fruits and vegetables.

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Vitamin D

Vitamin D aids in the absorption of calcium in the body slowing down the rate at which bones lose calcium. It aids in the maintenance of bone density; therefore, preventing osteoporosis.

New evidence shows that it may also protect against chronic conditions like multiple sclerosis, type 2 diabetes, cancer, and rheumatoid osteoporosis. Vitamin D is produced by the skin when it is exposed to early morning sunlight.

Sources; cereals, milk, yogurt, and juices. Naturally, vitamin D is found in eggs and certain fish (salmon and tuna). A vitamin D deficiency also increases your chances of falling.

N.B; Some people argue that exposure to the sun predisposes us to skin cancer, so it is advisable to take vitamin D supplements instead following a consultation with your physician.

Foods Rich in Vitamin B12

Vitamin B12 is responsible for maintaining nerve function, production of red blood cells, and DNA. As you age, absorbing the vitamin from food is more laborious.

Foods Rich in Potassium

Surveys show that many older people even in America do not take the recommended 4700mg of potassium daily. Potassium aids in cell function reduces blood pressure and lowers chances of kidney stones. It is also believed to strengthen bones.

Sources; It is found in fruit and vegetables like bananas, prunes, and potatoes.

N.B; While lack of potassium is a problem, too much of it is dangerous, so consult your doctor before taking potassium supplements.

Magnesium

Magnesium plays a crucial role in 300 physiological functions. It keeps heart healthy, boost immune system, and strengthens bones. As one grows older, body's ability to absorb magnesium decreases.

Sources: It is mainly found in whole grains, nuts, fresh fruit, and vegetables.

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http://ajcn.nutrition.org/content/101/6/1339S.full

And this is life eternal, that they might know thee the only true God and Jesus Christ, whom thou hast sent

John 17: 3 (KJV)

WORDS ON MARBLE


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October 14th	Temitope Grace Emmanuel	Students' Affairs
October 5th	Olayinka Elizabeth Isawumi	Music
October 5th	Taiwo Olubunmi Akinyemi	Medical Centre
October 7th	Yetunde Alice Oyelakin	Bursary
October 10th	Oluyemi Gabriel Oguntola	Library
October 10th	Grace Mfon Emeh	Students' Affairs
October11th	Bukola Christiana Ojo	Students' Affairs
October 14th	Mercy Eshiet Akpekong	Chemical Sciences
October 15th	Oluwaseun Ronke Onilude	Biological Sciences
October 15th	Modupe Abike Oyebanjo	Audit
October 16th	Olawole Michael Ogunkanmi	Registrar's Office
October 17th	Joseph Olusola Asha	Medical Centre
October 26th	Bisola Mary Raji	Bursary
October 30th	Prof. Emmanuel Adedayo Adedun	Languages
October 31st	Abayomi Clement Ajayi	ICT

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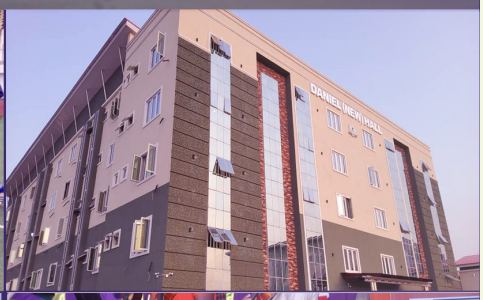

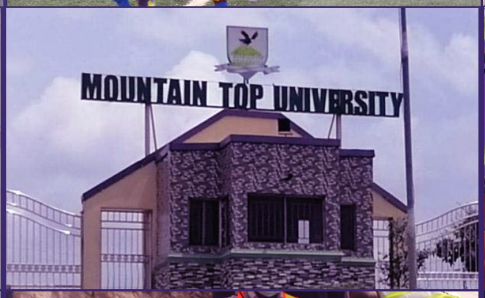




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