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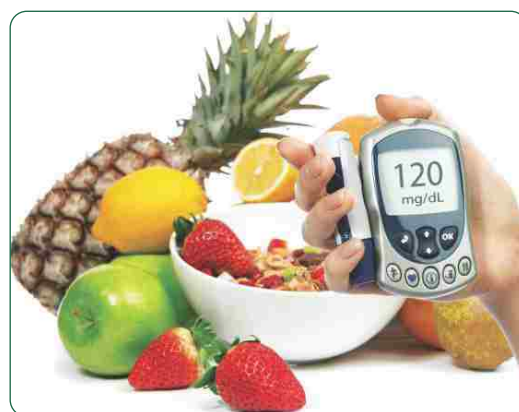
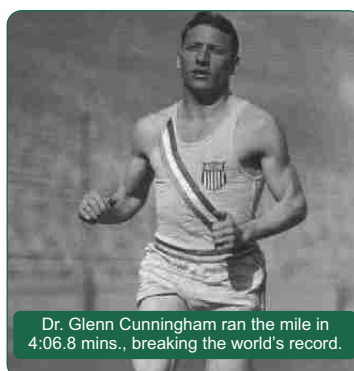
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MESSAGE FROM THE MANAGING DIRECTOR



Dear Friends,

As we close FY 2016-17 and FY 2017-18 begins to dawn, I would like us to reflect on what we've accomplished, the journey we've taken to get to where we are and the plans we have for a bright and exciting future.

I would like to start by sharing with you all my heartfelt appreciation for each member of the Catalysts team. I recognize that we wouldn't have reached where we are without the contributions made by each and every one of you. Thank you!

Last year was a year of challenges and required resilience. Circumstances posed serious road blocks to our growth projections. I am proud to say that all of you accepted the challenge and upped the ante to show immense strength in the face of adversities. Catalysts continued on its path of growth..... We know that because of the efforts of our phenomenal team, we not only survived 2016-17, we thrived!

We want 2017-18 to be even more successful for the company and for you. It's an incredible feeling to know that when I meet clients - both existing and potential, that there's no way I can overstate the competency and commitment of my team.

Thank you for all you do. As you all know by now, I am available to each and everyone of you always.



Munish Madaan

Vision 2020

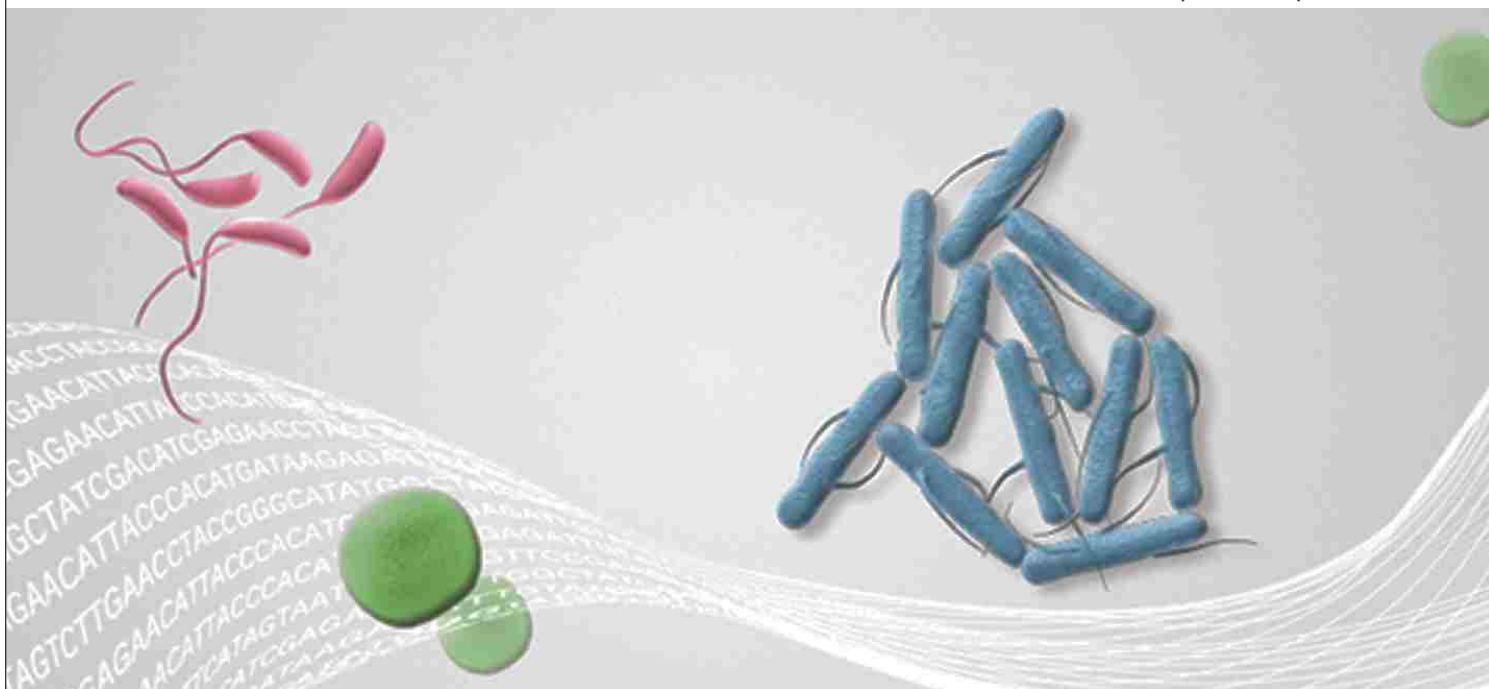
Catalysts vision is to be a rapidly growing organization and a happy workplace. An integrated biotechnology company; we will evolve as a globally recognized and valued brand. Catalysts will develop a business defined scalable infrastructure pan India and with Global footprints. World class manufacturing infrastructure and accredited research & development facilities will be created to meet the business requirement, for innovative products in existing and new customer base.

We will have a work culture of integrity, respect, team work, ownership, trust, learning and happiness for all stakeholders. Catalysts will be a process driven, professionally managed and people centric organization. We will create Catalysts as a high value business venture with an inclusive growth opportunity for all stakeholders.



Molecular Tools for the Microbial Community Analysis of Biological Wastewater Treatment

Dr. Archana Prakash, Research & Development Department



Alcoholic beverages can be categorized under three classes as malt beverages or beer, wines and distilled spirits. Variety raw materials such as grains, fruits and vegetables are processed for the production of fermented and distilled alcoholic beverages. The most popular grains include barley, rye, rice and wheat whereas grapes, apple, plum and pomace are most commonly used fruit sources. Potatoes, sugarcane, molasses and agave are among the vegetables that are used in the production of rum, vodka and tequila.

Alcohol production processes produce vast amounts of wastewaters with different properties depending on the raw material and product. Treatment of these wastewaters with high volumes is mostly problematic due to acidic, recalcitrant and colored properties and high organic matter content. A common approach for treatment of alcohol industry wastewaters is “Anaerobic Treatment Technology”. It is an advantageous process due to biogas recovery, less energy and nutrient requirements, less sludge production and durability under varying conditions. A number of anaerobic reactors such as Upflow Anaerobic Sludge Blanket (UASB) reactor, Expanded Granular Sludge Bed (EGSB) reactor, Upflow Anaerobic Filter (UAF), Upflow Fixed Film Column (UFFC), Upflow Fluidized Bed (UFB), Down-flow Fluidized Bed (DFB), Anaerobic Hybrid Reactor and two-stage reactor systems have been used for treating alcoholic beverage effluents under different Organic Loading Rates (OLRs) and Hydraulic Retention Times (HRTs).

Diversity of microbial community as well as wastewater characteristics and maintaining desired operating

conditions, is a critical component in anaerobic reactors which actually determines the system performance. Treatment efficiency is highly dependent on the activity of bacterial and archaeal populations which are in turn related to the influent wastewater characteristics and environmental/operational conditions such as pH, temperature, shock loadings, etc. Therefore, community analysis is an important practice for monitoring efficiency of biological treatment systems.

Natural and engineered environmental systems have a complex microbial structure with a high genetic diversity which is related to process stability. Thus, microbial community is the key factor in biological treatment systems for determination of operational conditions that provide desired reactor performance.

Determination methods of microbial diversity can be divided into two classes namely culture dependent and culture independent. Traditional methods depend on the cultivation and enumeration of microorganisms. However, the inadequacy of defined media for every type of species limits the applicability of this technique to 0.1% -10% of all microorganisms which underestimates the actual microbial diversity. Slow growth rate and unknown growth requirements of anaerobic microorganisms make their cultivation more difficult. In addition, cultivation methods provide information only about the physical structure of the microorganisms rather than the genotype.

Due to the complex nature of the microbial community in biological wastewater treatment processes, culture independent methods are required for accurate analysis of microbial community. The limitations of cultivation based techniques are overcome by molecular methods which are based on DNA/RNA analysis. Molecular methods can be classified as Fluorescent In Situ Hybridization (FISH), Polymerase Chain Reactions (PCR), cloning-sequencing, nucleic acid fingerprinting methods and Quantitative real-time PCR (QPCR), Fatty Acid Methyl Ester (FAME) analysis, Stable Isotope Probing (SIP), microarray and metaproteomics, etc. With the introduction of molecular methods and tools, the microbial community dynamics of bioreactors was better understood. However, like all other techniques, there is not a single molecular method that prevails above others since all techniques have strengths and weaknesses as well as biases. DNA dependent methods like cloning or DGGE which indicates presence of species in the community, do not give accurate information about active populations whereas RNA dependent methods do. FISH gives advantage of observing active populations and visual information about communities; however, it cannot identify all microbial structure since its boundaries are limited with the probes used in the study. Also some techniques produce different results which are sometimes confusing. Differences of results also indicate biases of molecular techniques which can be circumvented by application of different techniques together.

The following part summarizes the most common molecular methods used for microbial community analysis in bioreactors treating alcoholic beverage wastewaters reported in literature.

FLUORESCENT IN SITU HYBRIDIZATION (FISH)

FISH is an r-RNA targeting method which gives information about the active microbial community.

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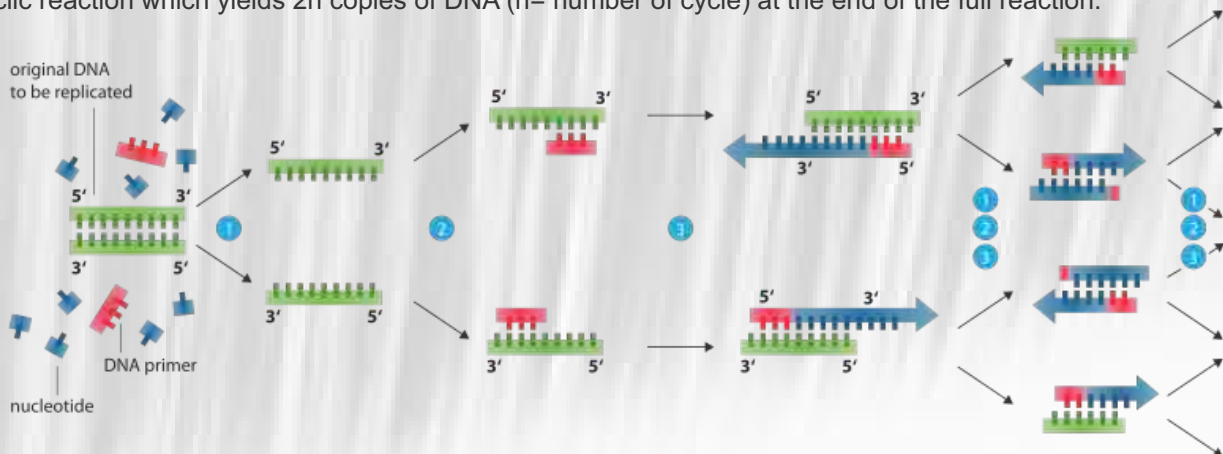
FISH is a 4- step process:

- i) Fixation of the cells and permeabilization of the cell walls
- ii) Hybridization of the rRNA with fluorescently-labeled probes
- iii) Washing the unbound probes
- iv) Visualization of the hybridized cells under epifluorescent or confocal scanning laser microscope (CSLM) with appropriate cubes.

Probes can be designed to be complementary to species-, group-, or kingdom-specific target sites.

POLYMERASE CHAIN REACTIONS (PCR)

PCR is a method for amplification of specific DNA sequences. Prior to PCR, DNA from the sample is extracted via physical and/or chemical methods. PCR is the first step of most of the DNA based methods and includes 3 steps : denaturation of the double strand DNA, annealing of the primers that specify the region of amplification on single strands and extension of newly synthesized DNA strands. PCR is an exponential and cyclic reaction which yields 2^n copies of DNA (n = number of cycle) at the end of the full reaction.



CLONING SEQUENCING

Cloning is applied for producing numerous amounts of DNA segments. In environmental samples, cloning provides the identification of each species as a single clone. Cloning can be followed by sequencing of clones to determine the phylogenetic diversity of the environmental or bioreactor sample from which DNA was originally extracted. The sequences can be compared with previously constructed databases helps to determine the species that is the closest phylogenetic relative of the sequence.

NUCLEIC ACID FINGERPRINTING METHODS

There are several fingerprinting methods such as amplified ribosomal DNA restriction analysis (ARDRA), (automated) ribosomal intergenic spacer analysis ((A)RISA), terminal restriction fragment length

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polymorphism (T-RFLP), single-strand conformation polymorphism analysis (SSCP) and Denaturing/ Temperature gradient gel electrophoresis (DGGE/TGGE) used for screening clone libraries, comparing diversity of various samples and following the changes in microbial community structure. They are mostly based on similar principles for separation and characterization of samples. DGGE and TGGE are among the broadly used fingerprinting methods for community characterization of environmental and bioreactor samples. The PCR products are separated on a polyacrylamide gel containing a linear gradient of a denaturant mixture of urea and formamide or a linear temperature gradient. Separation of the DNA fragments is based on electrophoretic mobility of DNA molecules due to the nucleotide content and composition. DGGE/TGGE can successfully differentiate sequences that differ even in one nucleotide.

QUANTITATIVE REAL TIME PCR (QPCR)

Quantification of microbial cells in a sample is important by means of determining low levels of populations and abundances of species in total community. QPCR system is based on the detection and quantization of fluorescent signals coming from the amplicons. QPCR makes it possible to monitor the PCR reaction during exponential phase where the first significant increase in the amount of PCR product correlates to the initial amount of target template.

In order to shaping microbial ecology of anaerobic reactors and optimization of treatment processes several points such as wastewater characteristics, reactor types and operational conditions are important. In addition to analysis of wastewater parameters such as COD, BOD5, nitrogen, phosphorus and solid content, total and active microbial population was investigated by a number of molecular tools; FISH accompanied by SEM, DGGE, cloning, slot-blot hybridization and SSCP. Use of these techniques in combination provides confirmed results about archaeal and bacterial diversity.

Reference: B.K. Ince, N. Ayman Oz , G. Turker, S. Çelikkol , O. Ince



Ten Everyday Uses of Biotechnology

Rakesh Joshi, Research & Development Department

What is industrial biotechnology? Is it a complicated process? Is it something to do with enzymes, modules or bugs?

What if I told you all the above is true and what if I told you industrial biotechnology is applied to the many products that are in your home and you use on an everyday basis. Specifically, industrial biotechnology uses enzymes and micro-organisms to make bio-based products in sectors such as chemicals, food ingredients, detergents, paper, textiles and bio fuels.

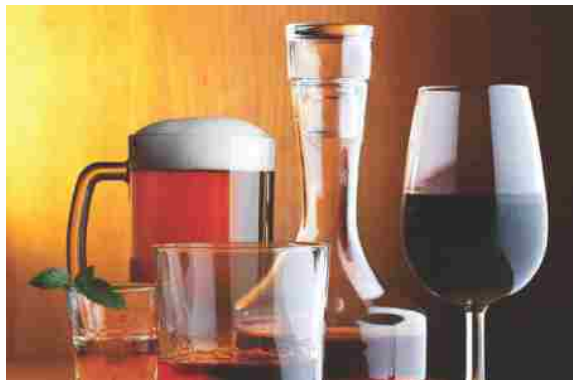
Industrial biotechnology is one of the most promising technologies around; it has the potential to address some of the world's greatest challenges, such as feeding a growing population and offering new alternatives to our scarce natural resources. Although there is a long way to go, if industrial biotechnology reaches its full potential it has the potential to impact the world.

Since that time, industrial biotechnology has produced enzymes for use in our daily lives and for the manufacturing sector. In the main, industrial biotechnology involves the microbial production of enzymes,

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which are specialized proteins. These enzymes have evolved in nature to be super-performing biocatalysts that facilitate and speed-up complex biochemical reactions. These amazing enzyme catalysts are what make industrial biotechnology such a powerful technology.

10 WAYS INDUSTRIAL BIOTECHNOLOGY IS USE IN OUR HOMES



1. Beer, Wine and Alcohol

Alcohol production is one of the most basic applications of industrial biotechnology. For instance, beer is made from water, a starch source such as barley, brewer's yeast and a flavoring such as hops. The starch in the barley must be converted to sugar by enzymes (which are activated when the barley is malted) then fermented (the brewer's yeast metabolizes the sugars to produce alcohol and carbon dioxide). Enzymes and microbes are two common tools used in industrial biotechnology.

2. Biodiesel

First generation bio fuel is produced by fermenting plant-derived sugars to ethanol, using a similar process to that used in beer and wine-making, or by converting plant-oils to biodiesel. It requires crops such as sugar cane, corn, wheat, oil seed rape or sugar beet. Biofuels such as bio ethanol and biodiesel are blended with petrol and diesel to meet legislation on greenhouse gas emissions. Blending bio fuels into road transport fuel can reduce their carbon impact. The fuel quality directive allows for up to 10% ethanol to be blended into petrol. Reducing the carbon footprint by producing aviation fuel from bio-based feed stocks is also heavily in development, with bio refineries being constructed to produce low-carbon alternative fuels to fossil-derived jet fuel.



3. Household Products - Washing Detergent

Such products come either directly from cells, or are made using enzymes taken from cells. In a way, cells are bio factories, with production lines of enzymes (workers) assembling our desired product. We can either use the whole factory or just specific workers to produce what we want, i.e. whole cells or isolated enzymes.

In addition to using them as tools to make biotech products, cells and enzymes can also be biotech products themselves. For instance: probiotic yogurts and non-soya veggie burgers contain microbial cells; and enzymes are used in washing detergents, food processing, cosmetics and much more.

4. Sweet as Sugar

Traditionally, the industrial sugar used for microbial fermentation is extracted from cereal crops, however only a small proportion of the crop is used, as the majority of sugars are inaccessible to traditional processes. The remaining fraction is known as lingo cellulosic biomass and is generally discarded. Development is ongoing to access the sugars locked up in waste-derived feed stocks such as agricultural residues, forestry residues and post consumer waste.

5. Plastics

Bio plastics, made from biopolymers are already utilized in plastic food packaging, mobile phone cases,

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sunglasses, pens and personal care packaging for products such as shampoos and conditioners.



6. Fabrics

Fabrics have been in use for most of this century and the fermentation vat is probably the oldest known dyeing process. Polyester is a synthetic polymer fiber produced from fossil fuel and is used to make clothing, blankets, carpets, and other fabrics. Many biochemicals are also used in the production of dyes, tanning agents, nylon and polyester, all of which are vital materials in the production of textiles for carpets, clothing and upholstery.

7. Personal Care Products

In the future, many different consumer products will contain materials derived from bio-based feedstock. Biochemical may also be utilized in processes to formulate personal care products such as make up, shampoos and skin care. Extracted Cellulose Fibers are absorbent and tough, and can be extracted from raw materials for use in composites as a replacement for glass, and in many applications where absorbency is needed, such as use in nappies, cat litter and sanitary products.

8. The Power and Heat in our Homes

Gas from bio refineries can be combusted to produce heat and power. Methane can be directly injected in the gas grid to heat homes and produce electricity. A bio refinery will produce enough energy and heat to cover its own parasitic load and also be a net exporter to the grid.

Energy can also be produced from algae as a bio fuel. Algae use photosynthesis to grow oil rich algae in controlled conditions. Fluctuating oil prices, global reliance on fossil fuels and agricultural chemicals have ignited interest in farming algae. Algae can grow in areas that are not suitable for agriculture and therefore don't impact on food crops. CPI is working on projects to allow the biomass from the algae to be recycled and used to produce a wide variety of products such as bio ethanol, biopharmaceuticals, biogas and compost for crop production.

9. Food and Drink

The food and drink industry uses many products that can be produced using biochemical - from bio plastics which are now widely used for packaging in supermarkets to flavors, fragrances, sweeteners, souring agents and acidity regulators which are used in a wide range of food products.

Bio refineries can also extract nutraceuticals such as dietary supplements and herbal products, and specialist chemicals can even be used to help ripen fruit ready for sale.



10. Healthcare

Industrial Biotechnology can present a significant opportunity to develop medicines that have been difficult to produce via other means due to purity issues. Bio-processing can be used to develop new pathways to convert low cost feed stocks into high value products, including active pharmaceuticals and their intermediates.

Reference: Becky Bend all, and Centre for Process Innovation (CPI), UK.

Enzymes

Namrata Tyagi, Research & Development Department

How enzymes help support digestive, immune and overall health!

What causes apples or bananas to brown? The culprits are enzymes, which oxidize phenolic compounds to make o-quinones. O-quinones produce a brown color by reacting to form compounds with amino acids or proteins. These catalysts serve a similar role in our bodies, as they are used to accelerate the process of turning one substance into another.



DIFFERENTIATING ENZYMES

There are two branches of enzymes:

1. The ones we get through diet (exogenous enzymes)
2. The kind we produce on our own (endogenous enzymes)

EXOGENOUS ENZYMES

Exogenous food enzymes come from raw fruits, vegetables, fish and meat. Their main function is to break down the food we eat into the nutrients our bodies can use. But, foods such as vegetables and meat lose their enzymes when they are cooked (at temperatures higher than 120 degrees Fahrenheit), boiled or even juiced, which can produce heat through friction.

ENDOGENOUS ENZYMES

As for enzymes produced in the body, metabolic enzymes build new cells and repair damaged ones found in the blood, tissue and organs while digestive enzymes work to break down food and absorb nutrients into the blood. Digestive enzymes include carbohydrase (for breaking down carbs), protease (for breaking down protein) and lipase (for breaking down fats). In addition, salivary glands secrete amylase to break down starches, grains, sugars and carbohydrates. Another enzyme is lactase, which breaks down lactose, the sugar found in milk. Meanwhile, the pyloric section of our stomach introduces pepsin and hydrochloric acid to the digestion process, which are secreted for protein digestion.

Many people do not produce enough enzymes naturally or get enough through diet for proper digestion. Therefore, supplementation is often a good idea, and digestion support is a key place where such supplementation can help. When customers need extra support, these enzymes (and others) in supplement form help ensure foods are broken down correctly to maximize the nutrition we get from them and to minimize any digestive discomfort.

STRENGTHENING YOUR IMMUNE HEALTH

When the digestion process is interrupted or has complications, it can lead to cellular problems due to deficiencies in important nutrients. When cells are starved of nutrients, they are unable to function properly, not allowing certain toxins out, and not letting certain nutrients in. White blood cells are highly impacted by this, which could affect our immune health.

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One reason is inflammation, which should be a natural and healthy response to foreign substances. But, chronic inflammation can be damaging and the cause of a host of problems. Some feel supplemental systemic enzymes like proteases can help because they help break down proteins that are dead, damaged or are marked with an antibody. According to nutrition expert DicQie Fuller, Ph.D., D. Sc., “When the body’s immune (defense) system breaks down, it is because of internal enzyme shortage”. She relates this process to autoimmunity, the cause of chronic inflammation in some people.

One patented combination of enzymes (rutosid, bromelain, papain, chymotrypsin, trypsin and pancreatin) was shown in studies to support immune health by offering the enzymes needed to “assist the body’s various regulatory and communications systems and support the function of tissues at a cellular level”. Research showed a positive resulting benefit to joint, skin, liver and glucose.

Enzyme therapy may benefit heart health, too, because it supports anti-inflammation and healthy circulation. In addition, lipase is needed to break down cholesterol and fats—certainly a factor in heart health.

Enzymes may also help with inflammation-related conditions like rheumatoid arthritis. Fuller says when she sees patients with such autoimmune diseases; she typically addresses any poor digestion issues first with a multiple enzyme supplement at meal times, a protease in between meals and other supplements.



FOOD FOR THOUGHT

The brain is the boss of our bodies; it tells every organ when and how to do their job, so naturally we need to make sure it is healthy through a nutritional diet. The part of the brain that suffers from an unhealthy diet is the hypothalamus, found at the base of the cerebrum. This organ, no larger than a lump of sugar, controls appetite, sexual desire, sleep and so many other vital functions. It is also the main operator for our

endocrine and nervous system. Unfortunately, when our digestion process doesn’t function properly, brain health can be affected.

Enzymes can help, and supplemental plant enzymes have been linked to mood support, for instance. According to an article by Lita Lee, Ph.D., author of *The Enzyme Cure*, there can be several nutritional causes for mental issues, which include protease deficiency, sugar intolerance, hypothyroidism and a junk food diet. As stated before, protease breaks down protein, and people with a protease deficiency develop more alkaline blood, which is linked to anxiety.

KEEPING OUR HORMONES IN CHECK

The endocrine system is made up of various glands that produce hormones for the body. If there is an imbalance, it can cause many problems. One in particular, which affects many women, is premenstrual syndrome. The most common symptoms of premenstrual syndrome are headaches, weight gain, breast tenderness and sugar cravings. Some feel a high-amylase supplement will help ward off sugar craving, while taking a supplement containing protease 10 days before a period combined with a change in diet can help decrease symptoms.

Switching sides for a bit, enzyme supplements can help men, too. Men who suffer from an enlarged prostate

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often have painful swelling and frequent, painful urination. A supplement with both protease and amylase is said to cut back these symptoms, but it must be taken carefully since an excessive amount of protease can actually cause frequent urination as well.

CATALYSTS FOR BEAUTY!

Everything that we have covered so far has concerned internal health, but what about improving the skin? Enzymes can benefit healthy skin aging, too. The reason why is that enzymes bind to the collagen in our skin, “realigning them in a more youthful, undamaged form, and act as free-radical fighters,” says chiropractic physician Anthony J. Cichoke. Decreased enzyme activity, he states, could lead to wrinkles, discoloration, sagging, and other

signs of aging skin. Cichoke feels that digestive enzymes help make nutrients available to our skin.

While this idea may be novel, there’s much precedence for the topical use of enzymes, specifically for supporting healthy-looking skin. Dead skin cells tend to linger on the living ones, causing a blockage for moisture, leaving skin feeling and looking dry. Enzymes eat away at this barrier and allow moisturizers to penetrate the skin. One such enzyme is papain, a protease from the papaya fruit. Bromelain and superoxide dismutase have also been used for this purpose. You’ll find enzymes in a variety of products from peels to moisturizers to serums.

AUTISM SUPPORT

Though not a cure, enzymes have been investigated for their benefits to those with autism. Research indicates that the gastrointestinal tract, the nervous system and the immune system are closely related; what affects one system could affect them all. Some autistic individuals, for instance, are sensitive to certain food ingredients like dairy and gluten, which aren’t properly broken down. Upon consumption, problem foods could trigger symptoms in some.

According to Karen DeFelice, a pioneer in the use of enzymes, “Around 90 to 93% of people trying a good quality enzyme product see improvements. While these figures were taken from informal studies and surveys

in autism related conditions, the results appear to be consistent in the general population. Benefits appear in a wide range of behaviour, language, cognitive and physical issues. Older children and adults experience benefits as much as younger children”. She says that low-dose enzyme formulas may not be as beneficial for this purpose, recommending instead those designed for therapeutic use.



ENZYMES NEED HELP, TOO!

Don’t forget to mention that taking enzyme supplements alone will not fully fix one’s health; your customers must maintain a healthy diet as well.

Reference: wholefoodsmagazine.com

14 Ways to Increase Productivity at Work

Monika Chaudhary, HR Department

Every minute of your life is gold. Are you treating it that way?



There are only so many hours in the day, so making the most of your time is critical. There are two ways increase your output - either put in more hours or work smarter. I don't know about you, but I prefer the latter. Being more productive at work isn't rocket science, but it does require being more deliberate about how you manage your time. There are 14 simple but effective strategies for increasing your productivity at work.

1. TRACK AND LIMIT HOW MUCH TIME YOU'RE SPENDING ON TASKS

You may think you're pretty good at gauging how much time you're spending on various tasks. However, some research suggests only around 17 percent of people are able to accurately estimate the passage of time. A tool like Rescue Time can help by letting you know exactly how much time you spend on daily tasks, including social media, email, word processing and apps.

2. TAKE REGULAR BREAKS

It sounds counterintuitive, but taking scheduled breaks can actually help improve concentration. Some research has shown that taking short breaks during long tasks helps you to maintain a constant level of performance; while working at a task without breaks leads to a steady decline in performance.

3. SET SELF-IMPOSED DEADLINES

While we usually think of a stress as a bad thing, a manageable level of self-imposed stress can actually be helpful in terms of giving us focus and helping us meet our goals. For open-ended tasks or projects, try giving yourself a deadline, and then stick to it. You may be surprised to discover just how focused and productive you can be when you're watching the clock.

4. FOLLOW THE "TWO-MINUTE RULE"

Entrepreneur Steve Olenski recommends implementing the "two-minute rule" to make the most of small windows of time that you have at work. The idea is this: If you see a task or action that you know can be done in two minutes or less, do it immediately. According to Olenski, completing the task right away actually takes less time than having to get back to it later. Implementing this has made him one of the most influential content strategists online.

5. JUST SAY NO TO MEETINGS

Meetings are one of the biggest time-sucks around, yet somehow we continue to unquestioningly book them, attend them and inevitably, complain about them. According to Atlassian, the average office worker spends over 31 hours each month in unproductive meetings. Before booking your next meeting, ask yourself whether you can accomplish the same goals or tasks via email, phone, or Web-based meeting (which may be slightly more productive).

6. TAKE ADVANTAGE OF YOUR COMMUTE

This goes for any unexpected "bonus" time you may find on your hands suggests author Miranda Marquit. Instead of Candy-Crushing or Facebooking, use that time to pound out some emails, create your daily to do list, or do some brainstorming.

7. GIVE UP ON THE ILLUSION OF PERFECTION

It's common for people to get hung up on attempting to perfect a task--the reality is nothing is ever perfect. Rather than wasting time chasing after this illusion, bang out your task to the best of your ability and move on. It's better to complete the task and move it off your plate; if need be, you can always come back and adjust or improve it later.

8. TAKE EXERCISE BREAKS

Using work time to exercise may actually help improve productivity, according to as per published studies- If possible, build in set times during the week for taking a walk or going to the gym. Getting your blood pumping could be just what's needed to clear your head and get your focus back.



9. BE PROACTIVE, NOT REACTIVE

Allowing incoming phone calls and emails to dictate how you spend your day will mean you do a great job of putting out fires--but that may be all you get accomplished. "Set aside time for responding to emails, but don't let them determine what your day is going to look like. Have a plan of attack at the start of each day, and then do your best to stick to it."

10. TURN OFF NOTIFICATIONS

No one can be expected to resist the allure of an email, voicemail, or text notification. During work hours, turn off your notifications and instead build in time to check email and messages. This is all part of being proactive rather than reactive

11. WORK IN 90-MINUTE INTERVALS

Researchers have found elite performers (athletes, chess players, musicians, etc.) who work in intervals of no more than 90 minutes are more productive than those who work 90 minutes-plus. They also found that top performing subjects tend to work no more than 4.5 hours per day.



12. GIVE YOURSELF SOMETHING NICE TO LOOK AT

It may sound unlikely, but some research shows outfitting an office with aesthetically pleasing elements--like plants--can increase productivity by up to 15 percent. Jazz up your office space with pictures, candles, flowers, or anything else that puts a smile on your face.

13. MINIMIZE INTERRUPTIONS (TO THE BEST OF YOUR ABILITY)

Having a colleague pop her head into your office to chat may seem innocuous, but even brief interruptions appear to produce a change in work pattern and a corresponding drop in productivity. Minimizing interruptions may mean setting office hours, keeping your door closed, or working from home for time-sensitive projects.

14. COMMUNICATE EFFECTIVELY AND EFFICIENTLY

Communication, without a doubt, is a crucial aspect of business operations. Without an effective system of communication in place, you will have difficulty in achieving goals and even in functioning properly. Communication here, by the way, is not just the simple use of devices, such as phones or verbal and written exchanges of information. It is about designing and using communication systems that are appropriate for the needs of a business or company.

If you feel the need to increase your productivity at work, resist the temptation put in longer hours or pack more into your already-full calendar. Instead, take a step back, and think about ways you can work smarter, not harder

Author: John Rampton

PRIVACY on SOCIAL NETWORKS



Surbhi Sinha Agrawal, Corp. Comm. Department

We are in a habit of sharing almost every aspect of our lives on social networks, and while these updates help us to communicate with friends and families, they can also be used by mischief mongers for identity theft and to track whereabouts and sometimes our posts can even work against us when it comes to future personal and professional alliances. Online privacy is important, so let's learn how to protect it...



FACEBOOK

1. Run a Privacy Check

In your PC web browser, click on the lock symbol (Privacy Shortcuts) located in the top right corner of the blue Facebook bar. Then, click on Privacy Check-up and go through the following 3 step process...

- Define who can see your posts by default: If it's set to "Public", that means everybody on the internet can view your posts. Set it to "Friends" so only those who are in your friend list will see your updates.
- Check which apps can post information to your timeline. For best results, set all options to "Only Me" so that some random game doesn't post your scores onto your Facebook page.
- Finally, review your profile (email address, birthday and relationship status) to choose what you would like to make visible to friends, and what you would like to keep private.

2. Control Who Contacts You

- Click on Privacy Shortcuts > Who can contact me?
- Click the drop-down list under "Who can send me friend requests?" and select Friends of Friends

3. Check What Apps Know About You

- In a PC web browser, go to www.facebook.com/settings/?tab=applications
- Click the Logged in with Facebook tab
- Click any app to check what information is being shared (your profile details, friend list, etc); who can see posts made through the app; and whether it can send you notifications.

4. Control Personal Info Given to Ads

- Go to www.facebook.com/settings/?tab=ads
- Here, you can opt out of seeing ads based on your visits to website and use of apps. However, you'll still see ads; they will just be less relevant to you.
- Choose if others can see how you interact with ads, such as 'liking' a page
- To manage your preferences for the advertisements that are shown to you, click on Edit > Visit Ad Preferences and remove the interest areas that Facebook has collected.

5. Check What Others Say About You

- Click the triangular drop-down list arrow adjacent to the lock icon in the top right corner of the Facebook menu bar and choose Activity Log.

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- In the left sidebar, click Timeline Review and approve/reject the posts that will appear on your timeline.
- Next, click Tag Review and manage your tags
- Finally, click Posts You're Tagged In to view all the posts you have been tagged in and untag yourself from these posts.

UNDERSTAND PRIVACY POLICIES

All internet companies have a privacy policy, but it's difficult to understand the legalese and technical terms. If you don't want to deal with jargon but still want to know what the company does with your personal data, then head to TOS; DR (Terms Of Service; Didn't Read). This website simplifies the terms of services for major websites like Google, Facebook, Twitter and Instagram, along with a handy rating system. tosdr.org



GOOGLE

1. Run a Privacy Check

- Go to...myaccount.google.com/privacycheckup
- Choose what information Goggle+ shares about you.
Recommendation: Enable Don't feature my publicly shared Google+ photos as background images.
- Click Edit Your Shared Endorsements Settings and uncheck the option that lets

Google display your reviews in ads of a service you may have used in the past.

- Allow/disallow people who have your phone number to find you on Google and view your personal information.
- Make your YouTube activity private
- Click Manage Your Google Photos settings to disable geo-location tagging
- Under Personalize your Google experience, set what information Google saves about you (such as web and app activity, etc.) and disable others (like YouTube search and watch history, your location history, etc.)

2. Control Connected Apps and Sites

- Go to... myaccount.google.com/security#connectedapps
- Click on the Manage Apps to see which apps are connected to your Google account long with the level of access they have of your information
- Click on an app you don't use regularly and click Remove to revoke access
- Scroll down and set Allow Less Secure Apps to "Off"



TWITTER

1. Review & Control Privacy Settings

- Go to...twitter.com/settings/security and scroll down to the Privacy section
- Choose who can tag you in Photo Tagging
- Under, Tweet privacy, lock down your posts so that only approved followers can see them

- Disable Tweet location to prevent Twitter from adding your location to your tweets. You can even delete location data from all previous tweets.
- You can set who can find you on Twitter with an e-mail or phone number in Discoverability
- Disable Personalization to prevent Twitter from tracking your browsing history
- Disable Promoted content to stop Twitter from displaying ads based on your personal information and interests.

- In Direct Messages, disable the option to “Receive direct messages from anyone”

2. Revoke Access to Apps

- Go to...twitter.com/settings/applications
- Click on the Revoke access button to stop infrequently used or untrusted apps and services that have access to your Twitter account

DOWNLOADS



PrivacyFix

AVG's PrivacyFix, which is available as a browser plugin for Chrome & Firefox, ensures your data doesn't fall into the wrong hands. Simply sign into PrivacyFix with your social accounts and it will figure out what personal data is being shared and the ad tracker networks that are trying to mine your information. The dashboard interface guides you through a step-by-step process to fix your privacy settings.



Privacy Badger

The Privacy Badger browser extension created by The Electronic Frontier Foundation (EFF), an independent organization dedicated to protecting consumer interests stops websites and ad-makers from tracking you.

Install the Privacy Badger extension and it'll do most of the heavy lifting, quietly working in the background and protecting your privacy while you browse the web. Be warned, this is not an ad blocker; it only stops ad-makers from tracking usage.



My Permissions

If you've been using the internet for awhile, you have probably given several third-party websites and apps access to your personal information. The quickest way to find out which services have what permissions, visit the website and go through all the major online properties to see what rights you have granted. MyPermissions boasts of a simple interface that shows you what you've done and offers options to fix it.

Next, set up the MyPermissions app or web browser extension to monitor your major accounts. You will get app alerts when a service gains access to your personal information.



Ghostery

There isn't a reliable free app for smartphones that prevents ad networks from tracking your web activities, so you've probably better off using a browser that promises to safeguard your privacy. Ghostery, which also makes extensions like Privacy Browser, has built a special mobile browser for Android and iOS devices which claims to detect and thwart web trackers and beacons.

Diabetes Care: 9 Ways To Avoid Diabetes Complications

Diabetes care is a lifelong responsibility. Consider 9 strategies to prevent diabetes complications.



Diabetes is a serious disease. Following your diabetes treatment plan takes round-the-clock commitment. But your efforts are worthwhile. Careful diabetes care can reduce your risk of serious—even life-threatening—complications.

Here are 9 ways to take an active role in diabetes care and enjoy a healthier future.

1. MAKE A COMMITMENT TO MANAGING YOUR DIABETES

Members of your diabetes care team—doctor or primary care provider, diabetes nurse educator, and dietitian, for example—can help you learn the basics of diabetes care and offer support along the way. But it's up to you to manage your condition.

Learn all you can about diabetes. Make healthy eating and physical activity part of your daily routine. Maintain a healthy weight. Monitor your blood sugar level, and follow your doctor's instructions for managing your blood sugar level. Ask your diabetes treatment team for help when you need it.

2. DON'T SMOKE

Smoking increases your risk of various diabetes complications, including:

- Reduced blood flow in the legs and feet, which can lead to infections, ulcers and possible removal of a body part by surgery (amputation)
- Heart disease

HEALTH

- Stroke
- Eye disease, which can lead to blindness
- Nerve damage
- Kidney disease

3. KEEP YOUR BLOOD PRESSURE AND CHOLESTEROL UNDER CONTROL

Like diabetes, high blood pressure can damage your blood vessels. High cholesterol is a concern, too, since the damage is often worse and more rapid when you have diabetes. When these conditions team up, they can lead to a heart attack, stroke or other life-threatening conditions.

Eating a healthy, reduced-fat diet and exercising regularly can go a long way toward controlling high blood pressure and cholesterol. Your doctor may also recommend taking prescription medication.



4. SCHEDULE REGULAR PHYSICALS AND EYE EXAMS

Schedule two to three diabetes checkups a year, in addition to your yearly physical and routine eye exams.

During the physical, your doctor will ask about your nutrition and activity level and look for any diabetes related complications-including signs of kidney damage, nerve damage and heart disease-as well as screen for other medical problems.

Your eye care specialist will check for signs of retinal damage, cataracts and glaucoma.

5. KEEP YOUR VACCINES UP TO DATE

High blood sugar can weaken your immune system, which makes routine vaccines more important than ever. Ask your doctor about:

- **Flu vaccine**

A yearly flu vaccine can help you stay healthy during flu season as well as prevent serious complications from the flu.

- **Pneumonia vaccine**

Sometimes the pneumonia vaccine requires only one shot. If you have diabetes complications or you're age 65 or older, you may need a five-year booster shot.

- **Hepatitis B vaccine**

The Centers for Disease Control and Prevention recommends the hepatitis B vaccine for adults with diabetes who haven't previously received the vaccine and are younger than 60.

If you're age 60 or older and have never received the hepatitis B vaccine, talk to your doctor about whether it's right for you.

- **Other vaccines**

Stay up to date with your tetanus shot. Your doctor may recommend other vaccines as well.

6. TAKE CARE OF YOUR TEETH

Diabetes may leave you prone to gum infections. Brush your teeth at least twice a day, floss your teeth once a day and schedule dental exams at least twice a year. Call your dentist if your gums bleed or look red or swollen.



7. PAY ATTENTION TO YOUR FEET

High blood sugar can reduce blood flow and damage the nerves in your feet. Left untreated, cuts and blisters can lead to serious infections. Diabetes can lead to pain, tingling or loss of sensation in your feet.

To prevent foot problems:

- Wash your feet daily in lukewarm water
- Avoid soaking your feet, as this can lead to dry skin
- Dry your feet gently, especially between the toes
- Moisturize your feet and ankles with lotion or petroleum jelly. Do not put oils or creams

between your toes-the extra moisture can lead to infection.

- Check your feet daily for calluses, blisters, sores, redness or swelling
- Consult your doctor if you have a sore or other foot problem that doesn't start to heal within a few days.

8. IF YOU DRINK ALCOHOL, DO SO RESPONSIBLY

Alcohol can cause high or low blood sugar, depending on how much you drink and whether you eat at the same time. If you choose to drink, do so only in moderation and always with a meal. Remember to include the calories from any alcohol you drink in your daily calorie count.

9. TAKE STRESS SERIOUSLY

If you're stressed, it's easy to neglect your usual diabetes care routine. The hormones your body may produce in response to prolonged stress may prevent insulin from working properly, which only makes matters worse. To take control, set limits. Prioritize your tasks. Learn relaxation techniques. Get plenty of sleep.

Above all, stay positive. Diabetes care is within your control. If you're willing to do your part, diabetes won't stand in the way of an active, healthy life.

Reference: <http://www.mayoclinic.org/>



The Power of Determination (true story)

The little country schoolhouse was heated by an old-fashioned, pot-bellied coal stove. A little boy had the job of coming to school early each day to start the fire and warm the room before his teacher and his classmates arrived.

One morning they arrived to find the schoolhouse engulfed in flames. They dragged the unconscious little boy out of the flaming building more dead than alive. He had major burns over the lower half of his body and was taken to a nearby county hospital.

From his bed the dreadfully burned, semi-conscious little boy faintly heard the doctor talking to his mother. The doctor told his mother that her son would surely die – which was for the best, really – for the terrible fire had devastated the lower half of his body.

But the brave boy didn't want to die. He made up his mind that he would survive. Somehow, to the amazement of the physician, he did survive. When the mortal danger was past, he again heard the doctor and his mother speaking quietly. The mother was told that since the fire had destroyed so much flesh in the lower part of his body, it would almost be better if he had died, since he was doomed to be a lifetime cripple with no

INSPIRATIONAL

use at all of his lower limbs.

Once more the brave boy made up his mind. He would not be a cripple. He would walk. But unfortunately from the waist down, he had no motor ability. His thin legs just dangled there, all but lifeless.

Ultimately he was released from the hospital. Every day his mother would massage his little legs, but there was no feeling, no control, nothing. Yet his determination that he would walk was as strong as ever.

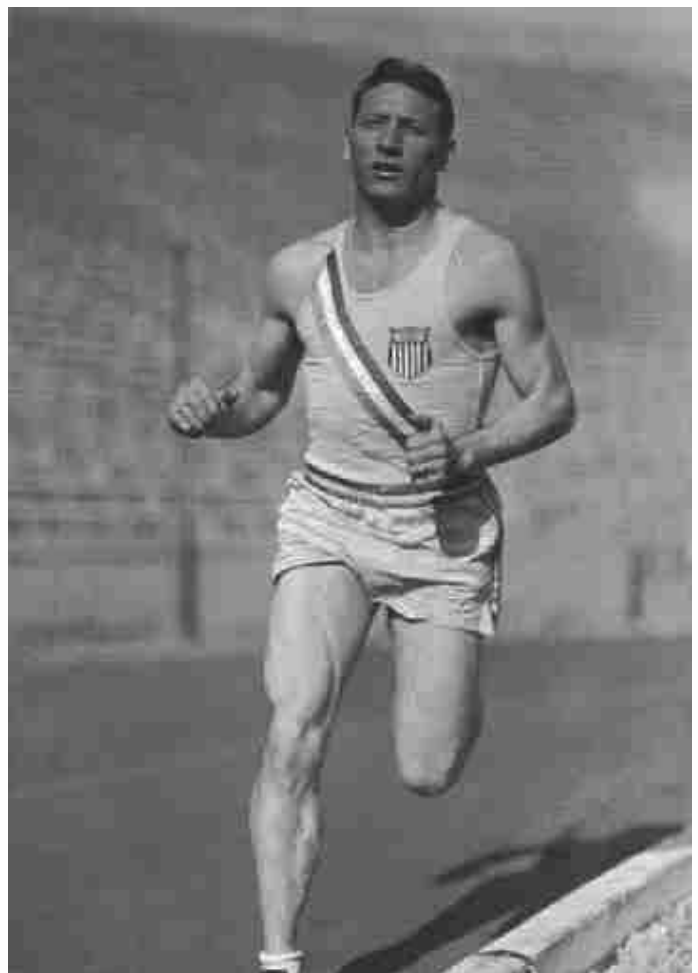
When he wasn't in bed, he was confined to a wheelchair. One sunny day his mother wheeled him out into the yard to get some fresh air. This day, instead of sitting there, he threw himself from the chair. He pulled himself across the grass, dragging his legs behind him.

He worked his way to the white picket fence bordering their lot. With great effort, he raised himself up on the fence. Then, stake by stake, he began dragging himself along the fence, resolved that he would walk. He started to do this every day until he wore a smooth path all around the yard beside the fence. There was nothing he wanted more than to develop life in those legs.

Ultimately through his daily massages, his iron persistence and his resolute determination, he did develop the ability to stand up, then to walk haltingly, then to walk by himself – and then – to run.

He began to walk to school, then to run to school, to run for the sheer joy of running. Later in college he made the track team.

Still later in Madison Square Garden this young man who was not expected to survive, who would surely never walk, who could never hope to run – this determined young man, Dr. Glenn Cunningham, ran the world's fastest mile**!



On June 16, 1934, Dr. Glenn Cunningham ran the mile in 4:06.8 minutes, breaking the world's record.

***His effort portrays that whatever you want to create in your life is yours for the making. As long as you desire it enough and allow your will to guide you, you can have and be whatever your heart desires. The only one that can put limits on our personal will is ourselves. Develop and encourage your will to create and all the forces of nature within and without will help you bring your desire to pass.*

Celebrations@Catalysts

REPUBLIC DAY CELEBRATION IN CATALYSTS



WOMEN'S DAY CELEBRATION



HOLI CELEBRATION



NAME : Jyoti Giri
DEPARTMENT : Supply Chain
DATE of JOINING : 30 Jan, 2017



NAME : Sutrishna Roy
DEPARTMENT : R&D
DATE of JOINING : 27 Feb, 2017