



BHAGAVAD GITA: Chapter 9, Verse 20

trai-vidya mam soma-pah puta-papa
yajñair ishvha svar-gatim prarthayante
te punyam asadya surendra-lokam
ashnanti divyan deva-bhogan

trai-vidyā—the science of karm kānd (Vedic rituals); mām—Me; soma-pāh—drinkers of the Soma juice; pūta—purified; pāpām—sins; yajñai—through sacrifices; ishtvā—worship; svam-gatim—way to the abode of the king of heaven; prarthayante—seek; te—they; punyam—pious; asādya—attain; sura-indra—of Indra; lokam—abode; ashnanti—enjoy; divyān—celestial; divi—in heaven; deva-bhogan—the pleasures of the celestial gods

tapamyaham aham varsham nigrihnamyutsrijami cha
amritam chaiva mrityush cha sad asach chaham arjuna

◆ TRANSLATION

BG 9.20: Those who are inclined to the fruitive activity described in the Vedas worship Me through ritualistic sacrifices. Being purified from sin by drinking the Soma juice, which is the remnant of the yajñas, they seek to go to heaven. By virtue of their pious deeds, they go to the abode of Indra, the king of heaven, and enjoy the pleasures of the celestial gods.

◆ COMMENTARY

Previously, in verse 9.12, Shree Krishna described the mentality of the non-believers and the demoniac, who embrace atheistic and ungodly views, and the repercussions that such people face. Then, He described the nature of great souls, who are engaged in loving devotion to Him. Now, in this verse and the next, He mentions those who are not devotees, but are not atheistic either. They perform the ritualistic ceremonies of the Vedas. This science of karm kā (Vedic rituals) is referred to as trai-vidyā.

People who are fascinated by the science of trai-vidyā worship the celestial gods, such as Indra, through the performance of yajñas (fire sacrifices) and other rituals. They worship the Supreme Lord indirectly because they do not realize that it is He alone who sanctions the gifts that the celestial gods bestow. Ritualistic ceremonies are considered good deeds, but they are not counted as devotion. The performers of ritualistic ceremonies do not get released from the cycle of life and death. They go to the higher planes of existence within the material universe, such as abode of Indra, the king of heaven. There, they enjoy exquisite celestial delights that are thousands of times more pleasurable than the sensual pleasures available on the earth. In the following verse, Shree Krishna points out the defect in celestial pleasures.



Is it your Birthday Today?

◆ FEBRUARY 4

Influenced by number 4 and the planet Uranus, you are a responsible, methodical, friendly, intelligent, systematic and a creative person. You are highly religious and philosophical, but you need to check your tendency to behave jealous, stubborn and self centered at times. This year you would make few important decisions regarding your business, which would give you better productivity and also increase your income. Your earnings would be good but would keep fluctuating throughout the year. You need to be very conservative in your spending and avoid risky investments. You would have a very romantic personal life this year and you and your beloved would share some truly memorable moments together. Pilgrimage or a distant journey cannot be ruled out. Despite your best efforts health will pose some problems for you later in the year. The months of July, October and January will be result oriented.

Scientists Identify Key Protein That Could Reverse Brain Aging

Scientists at the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), have identified a molecular switch that helps aging brains maintain their ability to generate new nerve cells. The discovery centers on a protein that appears to revive the regenerative potential of neural stem cells, a capacity that typically fades with age and contributes to declining brain function. The findings were published in *Science Advances*.

The study focuses on a transcription factor known as cyclin D-binding myb-like transcription factor 1 (DMTF1). Transcription factors act as gene regulators, directing when specific genes are activated and ensuring that cells behave as they should. The researchers found that DMTF1 plays a pivotal role in sustaining neural stem cell activity as the brain ages, positioning it as a key player in the biology of brain aging.

The research was led by Assistant Professor Ong Sek Tong Derrick, with Dr Liang Yajing as first author, from the Department of Physiology and the Healthy Longevity Translational Research Programme at NUS Medicine.

The team set out to understand why neural stem cells lose their ability to regenerate over time, and how this decline might be reversed to protect cognitive function during aging.

How DMTF1 Supports Neural Stem Cells

To investigate DMTF1's role, the team studied neural stem cells from human sources and from laboratory models engineered to mimic premature aging. They then used genome binding and transcriptome analyses to map where DMTF1 acts across the genome and to measure how it reshapes gene activity, helping clarify the chain of events that links this factor to stem cell maintenance.

The team focused on how DMTF1 behaves in neural stem cells with damaged telomeres and how this might relate to regeneration strategies.

Telomeres are the protective ends of chromosomes that shorten each time a cell divides, and their progressive shortening is widely recognized as a sign of aging.

The researchers observed that DMTF1 levels were reduced in "aged" neural stem cells. Important-

ly, reactivating DMTF1 alone was enough to restore the cells' ability to regenerate, pointing to its potential as a therapeutic target for maintaining neural stem cell function in the aging brain.

How DMTF1 Supports Neural Stem Cells

In addition, the study revealed a previously unknown role for DMTF1 in regulating helper genes (Arid2 and Ss18) that allow DNA to become more accessible and activate other genes involved in cell growth. When these helper genes are not properly regulated, neural stem cells lose their capacity to renew themselves.

Implications for Cognitive Health

"Impaired neural stem cell regeneration has long been associated with neurological aging. Inadequate neural stem cell regeneration inhibits the formation of new cells needed to support learning and memory functions. While studies have found that defective neural stem cell regeneration can be partially restored, its underlying mechanisms remain poorly understood," said Asst Prof Ong. "Understanding the mechanisms for neural stem cell regeneration provides a stronger foundation for studying age-related cognitive

decline."

The study findings also suggest approaches that enhance expression or activity of DMTF1 may have therapeutic potential in reversing or delaying aging-associated decline of neural stem cell function.

While the preliminary findings stemmed mainly from *in vitro* experiments, the researchers hope to explore if elevating DMTF1 expression can regenerate neural stem cell numbers as well as improve learning and memory under the conditions of telomere shortening and natural aging, without increasing the risk of brain tumors. The long-term objective is to discover small molecules that can enhance DMTF1 expression and activity to improve the function of aged neural stem cells.

"Our findings suggest that DMTF1 can contribute to neural stem cell multiplication in neurological aging," Dr Liang said. "While our study is in its infancy, the findings provide a framework for understanding how aging-associated molecular changes affect neural stem cell behavior, and may ultimately guide the development of successful therapeutics."

Massive Global Study Rewrites the Biology of Type 2 Diabetes

Scientists are getting a clearer picture of why Type 2 diabetes is so hard to pin down. In a major international project led in part by the University of Massachusetts Amherst and Helmholtz Munich in Germany, researchers linked hundreds of genes and proteins to the disease in ways that suggest cause, not just correlation. Many of these signals would likely stay hidden in studies that look only at blood.

The work, published in *Nature Metabolism*, points to a key challenge in diabetes research: the biology behind rising blood sugar does not play out the same way in every part of the body. It also shows why including people from many



backgrounds matters, since genetic clues that stand out in one population may be faint or invisible in another.

Moving Beyond Blood-Based Studies

To sort likely drivers from bystanders, the team analyzed genetic data from more than 2.5 million people worldwide and treated it as a "natural experiment." Because genetic variants are assigned at conception, they can help researchers trace which biological changes are more likely to sit upstream of disease. The study compared patterns across seven tissues and four globes.

al ancestry groups, then asked a simple question: what do you miss if you only measure blood?

"We've known for some time now that tissue context is important to consider when trying to understand the mechanisms underlying the development of Type 2 diabetes," says Cassandra Spracklen, associate professor of epidemiology at UMass Amherst and co-senior author of the paper. "But this work demonstrates just how important that context truly is."

Blood is convenient, but Type 2 diabetes involves a coordinated breakdown across multiple organs, including adipose (fatty) tissue, the liver, skeletal muscle, and the

insulin-producing cells of the pancreas. Gene activity and protein levels can look very different depending on where you measure them, so a blood sample can miss changes happening at the source.

Tissue-Specific Genetic Signals

Across the seven tissues, the researchers found causal evidence pointing to 676 genes. Yet overlap with blood was limited: only 18% of genes with a causal effect in a primary diabetes tissue, such as the pancreas, showed a matching signal in blood. At the same time, 85% of genetic effects observed in diabetes-relevant tissues were completely absent from blood-based analyses.

Word of the Day

HORNSWOGGLE

HORN-suh-gul

What It Means

To hornswoggle someone is to trick or deceive them.

// I think we were hornswoggled by that magician.

HORNSWOGGLE in Context

"Netflix users have been warned to look out for an insidious, AI-powered email scam that looks nearly in-

distinguishable from the real deal. ... If you have been already hornswoggled by such a scheme, Netflix advises changing your password and reaching out to your bank." — Ben Cost, The New York Post, 3 Mar. 2025

Did You Know?

Hornswoggle is a slang word of some considerable mystery, at least where its etymology is concerned. The word appears to have originated in the southern United States in the early 19th century. The earliest known written record comes from an 1829

issue of *The Virginia Literary Magazine* in its glossary of Americanisms. The magazine states that hornswoggle comes from Kentucky, and that its oddness matches nicely with other 19th-century Americanisms, such as *sockdolager*, *absquatulate*, *callithump*, *slungullion*, and *skedaddle*. While the exact point at which hornswoggle entered our language, and the way in which it was formed, may remain unknown, it is a charming addition to our language, joining *bamboozle* and *honeyfugle* as colorful ways to say "to deceive."

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SOLUTION OF PREVIOUS PUZZLE

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6	2	3	4	1	8	7	9	5

Solved By Amo Angmo

STARS & PLANETS



ARIES: Welcome to another great day, Aries. The energy from the day's aspects is positive and encouraging when it comes to communication and interaction with others. Why not take advantage of this? Get together to visit with friends and family and enjoy yourself. Consider inviting people over for a game or dinner. Even a potluck can be a lot of fun. You work hard all the time, so play hard today!

TAURUS: Consider channelling your philosophical inspirations into some creative writing, Gemini. You'll certainly enjoy this type of activity. Even if you haven't explored this before, there's no better day than today to give it a whirl. Why not start a journal if you haven't done so already? This will give your ideas a place to incubate, and it can become a starting point for further reflection.

GEMINI: Consider channelling your philosophical inspirations into some creative writing, Gemini. You'll certainly enjoy this type of activity. Even if you haven't explored this before, there's no better day than today to give it a whirl. Why not start a journal if you haven't done so already? This will give your ideas a place to incubate, and it can become a starting point for further reflection.

CANCER: You might feel the need for some time to yourself today, Cancer. And why not take it? Chances are you're surrounded by others most of the time, and when you don't take time to be alone with your thoughts and feelings, it can prove unhealthy for you. Taking care of your emotional well-being is critical, as you have a deeply sensitive nature.

LEO: Today you may want to go your own way regardless of what someone else wants, Leo. Your independence is very important to you. However, compromise might be necessary in order to avoid serious conflict. Consider splitting your day to allow for the wishes of those close to you and time for yourself. If you can't make others understand why you want to be alone, this might be the best solution.

VIRGO: Today may well find you in the mood to head out on a venture or visit someone, Virgo. When was the last time you took a day for something like this? Chances are it's been too long. Not only will you enjoy it but others will be thrilled to have some time with you as well. Whether you pack up the whole family or head out on your own, seize the opportunity to visit a new place or connect with people you haven't seen in a while.

LIBRA: Serious thinking and communication will be enhanced today, Libra. These are strong qualities for you anyway, and with this added boost, you'll need to have a place to express yourself. If you've started a journal, this can prove to be an excellent outlet. Talking with other people is another. If there are issues or worries that have been bothering you, consider getting together with those involved and airing what's on your mind.

SCORPIO: You might feel cornered into doing something you just don't want to do today, Scorpio. Perhaps you made a promise to handle a project, or someone close to you has decided that it's the day to tackle something specific. Either way, if you're uncomfortable following through, communicate that to this person. Your ability to express yourself and be understood is enhanced with this day's energy.

SAGITTARIUS: You might discover that someone close to you, a family member perhaps, could use a hand today, Sagittarius. Chances are good, too, that he or she won't ask for help out of pride. Don't let that stop you, though. If you recognize a situation where you can be of assistance, go for it. Don't wait for an invitation or request. Simply take hold of the circumstances and do what you can.

CAPRICORN: When was the last time you used a pen and paper, Capricorn? In this age of computers, the keyboard has all but replaced these wonderful tools. In the same way that walking provides much more than fresh air, the kinesthetic value of the rhythmic motion of writing with a pen is far more soothing and even healing than most realize.

AQUARIUS: Today may bring a keen sense of empathy and understanding, Aquarius. With this, verbal communication is also more likely to be effective. Consider seizing this energy by making a point of talking through any problems or issues you have with those in your life. If they don't live with you, see about driving over to visit them or calling them up to work things out.

PISCES: Don't be surprised if you find your mind going a thousand miles a minute today, Pisces. Slowing down will likely elude you and you'll have to find one means or another to express what's racing around in your head. The aspects today lend much to communication. Perhaps talking over your writing or ideas with someone whose insight you value will do the trick.