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(55th year), Edition # 130 Since Year 2000, August 2021

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## THE WAVES OF THE FUTURE?

### COMBINATIONS OF PILLS INTO ONE PILL COULD SIMPLIFY MEDICATION AND PREVENT MISSED DOSES.

One sign of aging is needing a pill organizer to keep track of your medications—blood pressure pills, cholesterol reducers and more. According to a recent study the average American 45 or older takes four prescription medications daily. The number of pills only gets higher for those with multiple conditions when you begin needing multiple pills, there's always the potential for harmful drug interactions, missed doses, or taking wrong pills.

But what if your meds could be combined into a single pill? A recent approach to simplify treatment has been to combine several drugs into a single pill designed to safely treat clusters of conditions such as elevated cholesterol combined with high blood pressure pills into one. In a recent study published in the *New England Journal of Medicine*, investigators randomized nearly 6,000 older participants who were at risk for Cardiovascular (CV) diseases, giving some a single daily "polypill" containing a statin to reduce LDL cholesterol as well as three blood pressure-lowering drugs (a beta blocker, a diuretic, and an ACE inhibitor). The remaining participants received either the polypill plus aspirin or a placebo.

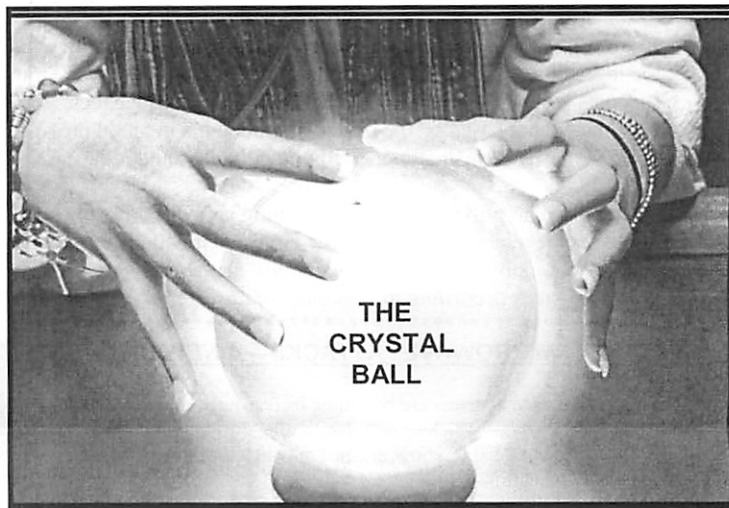
At 4.6 years' follow-up, they found the polypill reduced heart attacks, strokes and deaths from heart disease by 21% compared with the alternative multiple single med dosing. When combined with aspirin, the polypill worked even better reducing adverse cardiovascular outcomes by 31% compared to a placebo.

This concept could and should be broadened to encompass other common conditions. There could be multiple polypills, such as a heart failure polypill made up of multiple heart failure medications, or a heart failure pill specifically for diabetics, or a polypill that includes pain medication, and so on.

Thus, in the near future, your physician could prescribe a particular polypill tailored precisely to your needs, combining three or four different drugs. This would reduce both the hassle and risk of taking the five or ten different medicines into maybe two or three. The benefits could be both economically and psychologically beneficial.

The advantages: Lower doses of each medication may be needed, possibly reducing the incidence of troublesome side effects. Multiple meds (*in lower doses*) may be more effective than higher doses of a single med. Fewer doses are easier to remember. Polypills would be less expensive and would result in fewer pills and lower doses of meds which may require less office visits, blood tests and other monitoring.

Potential downsides are: Taking multiple meds, even at low doses, may lead to higher rates of side effects. If a side effect occurs, it may be impossible to know which of the meds in the polypill is responsible. When combined, medications can interact, causing serious problems such as too much or too little potency, allergic reactions or combined



### LATE BREAKING NEWS

(The next edition of AETHER will be pending via internet in October.)

**John C. York, KE5V** donated some radio equipment to **Bernie, KD5QHV** and **Linda Krasowski KE5QBK** who sold some for \$700. Bernie and Linda then donated the sale money to the MARCO Scholarship & MediShare Funds. MARCO thanks John, Bernie and Linda for their joint compassion.

**A problem:** Each Sunday we have about 40 stations check into Grand Rounds of the Air (14.342 MHz, 11 a.m. Eastern Time) on radio and 6-10 stations checking into our internet live stream (*listening to the lecture but not able to communicate with Net Control*). The radio check-ins are checked in for future Category II CME credits but the others are not. As a result, people like Chip Keister N5RTF who is running the live streams on the website (22MARCOAudio.net) has a lower CME check-in rate along with others using the internet and **not** the radio. **The solution:** Chip forwards stations using the internet, if possible, so CME credit can be received by year's end, or another way to relieve Chip from "overload." Chip has 16 hours credit whereas he should have more. That also goes for the computer listeners who get zero CME credit for lecture listening because Net Control (KD4GUA) doesn't know who they are.

**Attention Bald-Headed men...** Your male children may be contemplating a bald-headed future for them also—BUT, if you check page 10 you may now give them an educated prediction.

**What is the ideal food?** The potato! It contains all the vitamins and minerals essential to body health.

MARCO NET SCHEDULE

**WRITE TO US!**  
 We welcome your comments.  
 Email to  
 Aether@marco-ltd.org  
 Letters may be edited for  
 brevity & clarity.  
 Unedited member articles &  
 graphics are not the opinions of  
 MARCO-ltd.

DAY	EASTERN	FREQ.	NET CONTROLS
Any Day	On the Hour	14.342	Hailing Frequency
Sunday	10:30 a.m. Eastern	14.140	CW Net, Chip, N5RTF
Sunday	11 a.m. Eastern	14.342	Warren, KD4GUA
Wednesday	8:30 p.m. Eastern	7.22	Harry, WB9EDP

**MARCO'S CW  
 NET IS NOW  
 CALLED THE  
 "Bob Morgan  
 Memorial  
 Net"**  
 Sundays, 10:30 am,  
 14.140 MHz

Page 2

MARCO Grand Rounds is held Sunday at 11 a.m. Eastern Time; 10 a.m. Central; 9 a.m. Mountain, and 8 a.m. Pacific Coast time on 14.342. You qualify for one hour Category II CME credit with your check-in.

side effects may occur. Some may need only one or two meds to treat a condition; polypills may provide more medication than is needed. A polypill may be more expensive. Less dosing flexibility...polypills have fixed doses of several medications, so it may not be possible to adjust the dose of one medication without adjusting them all.

More than half of the recent *New England study* revealed positive results for people taking a polypill to lower blood pressure and cholesterol. Excellent adherence in 86%, and there were no serious medication-related side effects reported. The cost of the polypill was low.

There were no serious medication-related side effects reported in either the individual pill taker or the polypill taker. While there were too few CV events in this trial to know if the polypill could reduce them, the authors estimated that based on the observed reductions in blood pressure and cholesterol levels, treatment with the polypill could reduce CV events by 25%.

**Impression:** The polypill idea is up-coming and will probably be an advantage to the majority of adherents. Time taken will have to be determined by chronobiology (see next column), i.e., combining certain meds with other meds according to best times of absorption & excretion.

**\*\*\*\*\*  
 MYSTERY "MICROWAVE" ATTACKS—A NEW DISEASE?  
 \*\*\*\*\***

U.S. troops stationed overseas are becoming increasingly vulnerable to so-called *direct-energy attacks* which trigger debilitating flu-like symptoms. The Pentagon organized a special briefing in April in which they described the threat as "growing and urgent."

Officials said the attacks were similar to the "*Havana syndrome*" reported by 50 American diplomats in Cuba in 2016. Victims reported acute ringing and pressure in the ears as well as loss of hearing and balance, fatigue, and residual headaches. Some have suffered long-term brain damage.

A report by the CIA last December found "*directed, pulsed radio-frequency energy*" as the most probable cause.

Directed-energy attacks can be deployed to fry electronics or inflict pain or even permanent injury on persons. The attacks employ highly concentrated electromagnetic energy, such as a high-powered radio frequency or microwave beams and particle beams.

Because they don't leave behind a smoking gun or entry/exit wounds, such attacks are tough to identify and even more difficult to attribute to a source or country.

Russia and China have both researched directed energy attacks but because the weapons come in an array of shapes and sizes and can often be portable or operated remotely, they are especially difficult to trace.

(Information for above obtained by Marisa Herman's fine article in Newsmax, July 2021.)

**QUESTION & ANSWERS**

**Q. Where is the safest place during a thunderstorm?**

A. In an automobile. It is good policy to install a lightning arrester on your home and to wear rubber soled shoes during the thunderstorm season.

**Q. Is it safe for older people to fly?**

A. If a person can walk 100 yards and climb 12 steps without symptoms they should be safe to fly. People who should not fly include: A person with an anemia with a hemoglobin of less than 9 grams or a red cell count below 3 million; a person who has undergone recent surgery (gas expansion at altitude may blow the suture line); a person with an acute contagious disease; a person with a recent heart attack or one with bad lungs (a forced vital capacity of less than 50%); one with bad odors or one unable to control themselves, i.e., drunks & those with behavior defects.

**TIME**

**Einstein:** The only reason for "Time" is so everything doesn't happen at once.

**Standard clock time was begun by the railroads on Nov. 18, 1883 with the formation of four time zones.**

How does the body clock work? In an experiment a 60 year old man was put in a closed room for 4 days to measure the accuracy of his body clock. At periodic times he would tell the investigator what time he thought it was and what his body rectal temperature was. The findings were startling: 1. The internal body clock was off regular clock time by 1/3, i.e., 24 hours was thought to be 16 hours. 2. If the body is hot for one hour according to the body clock it is less than one hour. i.e., perception of time is slow; with cooler temperatures at one hour clock time seems to be 1 hour and 15 minutes body time i.e., the perception of time is fast and literally flies. 3 With age the body temperature drops about one half degree from early adulthood to the age 60. That is why young people perceive time to run slow and with older people time flies.

Discovery Channel reports pertaining to time: Slowest walkers among 36 cities are in Fresno, CA. and the fastest walkers are in New York City. 90% of the people in N.Y. City wear watches whereas the least punctual city is Atlanta, GA. where only 55% of the people wear watches. It was also found the fastest talkers are in Columbus Ohio and the slowest in Detroit. All in all the fastest cities were found on the east coast, namely Boston, Buffalo and NY. The slowest city was Los Angeles. The slowest movers of 32 countries was Mexico and the USA finished in the middle, at #126.

Circadian was coined by Prof. Franz Halberg of the Univ. of Minnesota He took the Latin "*circa*" and "*dies*" (about and day) and used the new word to describe diurnal rhythms. These rhythms do not require the input of environmental periodicity (*night and day cycles*) in order to function; they are, instead self-sustaining oscillations.

For example: **Potassium** peaks at noon, lowest at 4 a.m. **Sodium** peaks at noon and is lowest at 7 a.m.. **Calcium** peaks at 4 p.m. and is lowest at 6 a.m. **Dopamine** is high at 8 a.m. with a slow climb to peak at 3 p.m. and is lowest at 3 a.m. **Catecholamine** hits a high at 9 a.m. with a slow rise to peak at noon and a low at 4 a.m. **Steroids** peak at 9 a.m. and are lowest at 4 p. m.

**Urine excretion for men** peaks at noon and is lowest at 6 a.m.; women peak at 4 pm.

Thus **oral steroids** give better control when given at 3 pm. instead of in the morning. **NSAIDS** relieve the morning pain of Rheumatoid Arthritis but better if taken late at night. **H2 receptor blockers** are more effective for peptic ulcers when taken at once a day at 7 p.m. to knock out a nighttime peak in pain.

There are set-points for the regulation of temperature, blood pressure, cell division and others and these set points vary across the day, often markedly. Blood pressure rises about 20% immediately after awakening. The first two hours are the peak times for infarctions, hemorrhagic strokes, thrombotic infarctions and angina. Yet people often do not take their medicine until after they've dressed and had breakfast. Furthermore blood pressure lowering drugs take a few hours to kick in and work for only 18-20 hours.

Circadian rhythms in the form of jet lag are worse on eastbound (to Europe) trips than westbound.

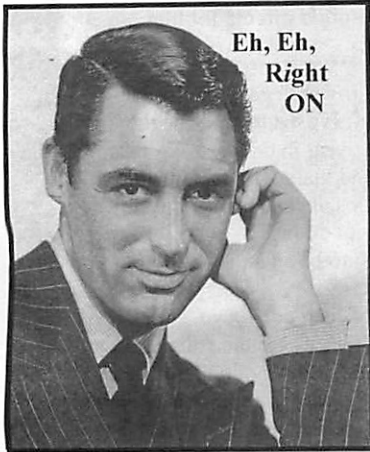
Medical schools still teach homeostasis, that is, the body is constant in time. They are not teaching this so-called "Chronobiology."

## NETIQUETTE

By Jeff Wolf, M.D., K6JW, former President of MARCO  
(Ed. Note: The below is presented as "constructive criticism.")

As a longtime member of MARCO and regular Sunday Grand Rounds of the Air attendee, I have become increasingly concerned over several issues related to the functioning of the net. Over the years I have learned much about how to assure the smooth running of net check-ins and the subsequent conduct of net business and programs. Some of what I have learned now seems relevant to point out as we look toward making the MARCO net run more efficiently. So, for what it's worth, here goes:

There is no reason for it to take 20 minutes (+) to get through net check-in. There are two problems accounting for the overly long check-in period. First, for orderly net check-ins, individuals need to space out their calls.



Eh, Eh,  
Right  
ON

For example. If three people call in in rapid succession, it may well cause the first and even the second not to hear their check-ins acknowledged because they're covered up a successor's transmission. This results in more calls to check in from those who didn't hear themselves recognized by the Net Control Officer (NCO). The solution is simple and effective. After every individual makes his/her call, there should be a five to ten second pause to allow the NCO to acknowledge the caller. If there's no response from the NCO the

station trying to check in should call once more. If, again there's no response, he should wait until others have gone through the check-in process before asking for a relay. No one else should jump in to offer a relay unless the calling station or NCO requests one. Finally if an operator can't be heard or relayed, going to the internet streaming audio and sending Warren an e-mail log-in notice is a viable alternative. Again, and it cannot be stressed enough, do not jump in to "help" the NCO unless such help is specifically requested. Sometimes the best way to help is not to "help."

On the subject of relays, no one should offer a relay and then only give a partial call sign or, as I've heard multiple times on the net, say he's not sure of the call sign but provide some guess or partial call sign in place of certainty. If one can't offer the full call sign when it's requested, one should refrain from hitting the PTT (*push to talk*) button. And when doing a relay, it's extremely poor form and inconsiderate to start a one sided conversation about some unrelated topic. Just give the call sign! Just give the call sign and get off the air.

Once check-in is completed, the NCO will direct what is to come next. While I am not an advocate for excessive formality on the MARCO net, I would urge that until a certain degree of self-control over one's PTT switch is attained, one should not simply presume to start transmitting without requesting permission from the NCO. Further, once recognized, transmission should not go on interminably, as certain ones have. The irritation this has caused and continues to cause among net participants is significant.

With reference to the previous point, when comments are made, they should be pertinent to the general subject under discussion and not wander off on a tangent just because someone thinks everyone else will be held rapt by the discourse.

All of the above fall into the general categories of standard net operating courtesy and fostering of net efficiency. I would urge everyone to take a moment to reflect on his/her own net participation and, if necessary adjust operating practices accordingly. The net will run more smoothly and efficiently, participant satisfaction (recently less than desirable) will increase, and Warren's job will be made much easier.

(Any further constructive criticism to elevate our net system please submit with permission to print.)

### 3

## ANCIENTS KNEW THINGS ABOUT OVERCOMING FEAR THAT MODERN MEDICINE IS JUST DISCOVERING.

\*\*\*\*\*

Submitted by Chuck Lind NABCL

What if literature contains a secret for maximizing our mental health and happiness?

Aristotle's heirs in psychology have begun deploying brain scanners and other space-age instruments to recover the flywheels he detected. Their research confirms his conjecture of the word "catharsis" which means it was used by ancient physicians to purge "fear" from their systems.

Post-traumatic fear, as its termed by modern psychiatrists, is meant to be a form of emotional self-protection, a way of maintaining our distance from the world so we don't get harmed again.

Traumatic fear will be experienced by about 90% of us over our lifetimes, and its post-traumatic residue will linger in roughly 10% of cases. There's no effective treatment, but over the past two decades, psychiatric studies involving thousands of patients have yielded a pair of unexpected findings. The first is that it can be therapeutic to revisit our memories of the trauma. If we imaginatively play back our experience within a safe and supportive environment, then the "flashbulb" intensity of our remembrance often gradually decreases.

The second finding is that it can help to sweep our eyes from side to side while we mentally review the trauma. This curious fact was stumbled upon by researchers in the late 1980s, and at the time it appeared so random, even magical, that it was regarded warily as a drift into pseudoscience. But recent studies suggested that side-to-side eye movement can stimulate a small region of our brain called the superior colliculus-mediadorsal thalamus circuit which is involved in fear attenuation. Eye movement has proven effective enough in clinical trials to produce its own trauma therapy—eye movement desensitizing and reprocessing (EMDR)—that has been formally recommended by the American Psychiatric Assoc. and the Dept. of Veterans Affairs.

As surprising as these findings have been, both were already known to ancient Greeks.

The classic drama by Sophocles, Eurpides and Aeschylus staged scenes of psychological damage and domestic violence, interspersed with choral chants such as the ones found in Aeschylus's "Agamemnon," from 458 B.C. "*The law of our world is pain, the scar that teaches the hardness of days and leaves its mark in every heart.*" These chants were placed in the mouths of the chorus, a word that now simply means "song," but which was synonymous in Greek with "dance."

"Agamemnon" prompted spectators to recall their post-traumatic memoirs in a physically safe and emotionally supportive environment. Like EMDR the play's chorus delivered that prompt in a dynamic performance that shifted the eyes left and right. Although we cannot travel back in time to gauge the therapeutic effectiveness of these long-ago treatments, we have been able to observe their healing action on 21st-century trauma survivors.

Performances of "Agamemnon" have been staged for combat veterans by initiatives such as Bryan Doerries's Theater of War Productions and Peter Meineck's Aquilla Theatre Company, which place particular emphasis on the side-to-side movement incorporated into EMDR. These performances led the veterans to self-report a decrease in feelings of isolation, hypervigilance and other symptoms of post-traumatic fear.

(Above excerpts taken from Erika Hayashiki's fine article which appeared in the April 2021 edition of "Wired Magazine.")



Aristotle, 335 B.C. wrote that spectators of a Greek-tragedy experienced catharsis, the purging of fear



## **PFIZER TO LEAD IN NEW VACCINE THERAPY**

(As reported in the Wall St. Journal, 3/23/21.)

Pfizer aims to expand its vaccine business by becoming a leader in the new gene based technology behind its successful Covid19 shots.

Pfizer will develop new injections using the technology, called mRNA, to target other viruses and pathogens beyond the coronavirus. They will increase R & D in the technology, including adding at least 50 employees whose assignments will include mRNA and it will harness the new mRNA manufacturing network it assembled in the past year.

Pfizer's ambitions in mRNA are just one way that the pandemic is poised to permanently change the healthcare industry.

### **THE HISTORY OF VACCINES**

(Excerpts of the fine article by Angela Desmond, M.D. & Paul Offit, M.D. in the New England Journal of Medicine, 3/25/21)

In 2008, Kariko, Weissman and their colleagues at the Univ. of Pennsylvania modified messenger RNA (mRNA) using nucleoside analogues. These modifications stabilized the molecule and eliminated its capacity for inducing innate immunity, thereby making mRNA a promising tool for both gene replacement and vaccination.

In Dec. 2020, on the basis of safety and efficacy data generated in two large, placebo-controlled studies, the FDA issued emergency use authorizations for two mRNA vaccines for the prevention of Covid19. Clearance of this hurdle by the first mRNA vaccines represents the most recent in a series of breakthroughs in the realm of viral vaccines, each building on the last and each with a compelling record of disease prevention.

**The first major vaccine-related advance occurred in 1796, when Edward Jenner, a physician working in England, found that an animal virus (cowpox) could protect against disease caused by a human virus (smallpox). One hundred years would pass before viruses would be identified as causative agents of diseases; nevertheless, the notion that infectious diseases could be prevented by vaccination was born.** Jenner's work ultimately led to the eradication of a disease that is estimated to have killed more than 300 million people. The strategy of using animal viruses to prevent human diseases continues today with a rotavirus vaccine that is derived in part from a bovine strain of the virus.

The second breakthrough occurred nearly a century after the first. In 1885, Louis Pasteur found that the spinal cords of rabbits that had been experimentally inoculated with rabies virus were no longer infectious after 15 days of desiccation. On July 6, 1885, Joseph Meister, a 9-year-old boy who had been attacked by a rabid dog 2 days earlier, visited Pasteur's lab. Using a series of inoculations with suspensions of desiccated rabbit spinal cords, Pasteur saved Meister's life. Rabies, a disease with a mortality of virtually 100%, was now preventable after exposure. Pasteur had opened the door for vaccines made with physically or chemically inactivated viruses. During the 20th century, notable successes that relied on the killed-virus strategy included an influenza vaccine developed by Thomas Francis in the early 1940s, a polio vaccine developed by Jonas Salk in the mid-1950s (Salk had trained in Francis's lab at the University of Michigan), and a hepatitis A vaccine developed by Provost and Hilleman in 1991.

The third major advance in vaccinology occurred in 1937, when Max Theiler attenuated yellow fever virus by means of serial passage in mouse and chicken embryos. By forcing the virus to grow in nonhuman cells, Theiler introduced a series of blind genetic alterations in the virus that rendered it less capable of causing disease but still capable of inducing protective immunity. Derivatives of Theiler's yellow fever vaccine are still used. The latter half of the 20th century witnessed an explosion of live attenuated viral vaccines developed using his technique. In the early 1960s, Albert Sabin made a polio vaccine by weakening polio viruses using serial passage in monkey kidney and testicular cells. Other live attenuated vaccines followed, including vaccines to prevent measles (1963), mumps (1967), rubella (1969), varicella (1995), and rotavirus in 2008).



**5** The fourth breakthrough occurred in 1980, when Stanford bio-chemists Mulligan and Berg published findings from their experiments that involved transfecting monkey kidney cells with an E-coli gene and thereby causing mammalian cells to make a bacterial protein.

### **Recombinant DNA technology was born.**

This was made by using yeast or baculo-virus-expression systems, vaccines containing purified surface proteins from Hepatitis B virus (1986), human papillomavirus(2006), and influenza virus (2013) have since become available.

Although there is still much work to be done to address vaccine hesitancy, build trust, and ensure equitable benefits from vaccination, the list of vaccine successes in the U.S. is long. After the introduction of Salk's inactivated polio vaccine the incidence of polio dropped from 29,000 cases in 1955 to fewer than 900 in 1962. With the introduction of Sabin's live attenuated vaccine in the early 1960s, polio was eliminated from the U.S. Since its licensure in 2006, the bovine-human rotavirus vaccine has virtually eliminated rotavirus, preventing up to 75,000 hospitalizations and 60 deaths per year. During the 2019-2020 influenza season, the influenza vaccine prevented an estimated 7.52 million infections,

Other live attenuated viral vaccines have been equally important. The measles vaccine has nearly eliminated a virus that previously caused 3 million infections every year in the U.S.; the mumps vaccine has reduced the incidence of acquired deafness; the rubella vaccine has prevented 5,000 related abortions per year and the varicella vaccine has markedly reduced chicken pox morbidity. In addition, since the hepatitis B virus vaccine started being recommended for newborns in the early 1990s rates of this disease has fallen to almost zero.

**The full benefits of existing vaccines have yet to be realized but important strides have been made.** Now, the world faces its most devastating pandemic since 1918 when influenza virus killed about 50 million people. As of January 2021, the SARS-CoV-2 virus had killed more than 500,000 people in the U.S. and more than 2.5 million worldwide.

With the recent authorization of mRNA vaccines we have entered the fifth era of vaccinology. This class of vaccine doesn't contain viral proteins; rather, these vaccines use mRNA, DNA, or viral vectors that provide instructions to cells on how to make such proteins. The SARS-CoV-2 pandemic will be an important test of whether these new platforms can fulfill their promise of creating safe, and effective, vaccines more quickly than traditional methods. If they pass this test the next task will be to accomplish equitable, efficient vaccine distribution—which would represent an even greater achievement.

### **WHAT IS RECOMBINANT DNA ?**

Recombinant DNA technology is the joining together of DNA molecules from one or two different species. The recombined DNA molecule is inserted into a host to produce new genetic combinations that are of value to the host.

Since the focus of all genetics is the gene, the fundamental goal of lab geneticists is to isolate, characterize and manipulate genes. This is based on two other technologies, cloning and DNA sequencing. Cloning is undertaken in order to obtain the clone of one particular gene or DNA sequence of interest. The next step after cloning is to find and isolate that clone among other members of the library (a large collection of clones.). Once a segment of DNA has been cloned, its nucleotide sequence can be determined. Knowledge of the sequence of a DNA segment has many uses.

Recombinant DNA is a technology that uses enzymes to cut and paste together DNA sequences of interest.

(For further details see Page 9)



## CYCLE 25

(Excerpts from Steve Ford's excellent article from the April 21 edition of QST)

The energy output of our nearest star (*the SUN*) rises and falls in cycles that span roughly 11 years. Scientists assign numbers to these cycle and speak of their peaks as solar maximums, and their troughs as solar minimums.

In 2018 and 2019, we reached the solar minimum of Solar Cycle 24. Solar activity was substantially reduced with solar flux index ranging between the upper 60s and the lower 70s. (*Solar flux, or concentrated sunlight is a measure of how much light energy is being radiated in a given area*). The Sun was also bereft of sunspots (*darkened regions of reduced temperature caused by magnetic fields rising from below the Sun's surface*) during much of this period. An active Sun tends to spawn spots, but a quiet Sun can be spotless for many weeks at a time.

When the Sun goes quiet, the electron density of the ionosphere (*the electrically charged region of our atmosphere responsible for refracting or bending hi-frequency signals over great distances*) diminishes. A lower electron density in the ionosphere means it's a less effective prism for signals, particular at high frequencies. Therefore in the trough of Cycle 24, globe spanning DX contacts became more challenging and less common. If you wanted the best conditions for long-distance communication, you had to go to the lower HF bands, such as 8 and 40 meters. Signals at those frequencies still offered DX opportunities because they were more easily refracted by the anemic ionosphere.

But in 2019, scientists noticed something out of the ordinary. A few sunspots appeared with magnetic fields whose polarities were reversed compared to the sunspots that came before. This trend continued, and by December 2019 these reversed-polarity sunspots became the norm.

Decades of solar research shows that when sunspots with reversed magnetic became predominant, they herald the beginnings of new solar cycles. The scientific community reached the consensus that Cycle 24 had ended and Cycle 25 had begun.

At the end of 2020, the solar flux index shot upward and a cluster of powerful sunspots appeared. For the first time in years, the upper HF bands opened on a large scale. The boost eventually faded, but it may have provided a preview of what's in store.

The only problem with forecasting the solar future is that the sun can be a fickle creature. Scientists still don't know why solar activity runs in 11-year cycles, nor can they accurately predict what a new cycle may bring. Pessimistic forecasts predict Cycle 25 to be very much like Cycle 24—mediocre, but with reasonably good DX condition at the peak in 2025 and 2026. Optimistic forecasters call for a highly active cycle. They believe it will be like Cycle 23, which peaked in 2000 and again in 2001.

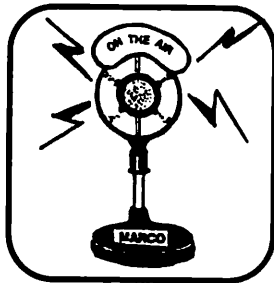
Many hams fondly recall the peak of Cycle 23 when 15 meters was open for DX daily and 10 meters frequently opened as well. Even on 6 meters, hams could achieve occasional transatlantic and transpacific DX contacts. If you enjoyed the HF bands, the Cycle 23 peak was a great time to be on the air.

Some veteran amateurs hold out hope that Cycle 25 could be spectacular, comparable to the legendary Cycle 19 of the late 1950s. Speak with them and you'll hear incredible stories of effortless worldwide communication any time of the day or night, even on 10 meters.

But the truth is, no one knows what Cycle 25 will bring. We know the new cycle has started, but how strong it will be is anyone's guess. At least the bleak predictions of an extended Cycle 24 solar minimum appear to be false and that's good news.

As we move into the early years of this decade you'll notice that the 20-meter band will start remaining open well after sundown. This behavior of the "queen of the DX bands" will become pronounced by 2025 and you're likely to see episodes of 20 meters remaining open all night, thirty meters will probably do the same.

Better days are on the way—we just don't know by how much. All hams will benefit regardless of license class. Who knows? History may repeat itself and Cycle 25 could even rival Cycle 19.



6

## HAIR LOSS

(As presented on Marco Grand Rounds of the Air on April 18, 2021.)

Alopecia (*hair loss*) can be divided into disorders on which the hair follicle is normal but the cycling of hair growth is abnormal and disorders in which the hair follicle is damaged. **Androgenic alopecia** is the most common cause of hair loss in women (and men). Other disorders include alopecia areata (90% are temporary spotting discoid loss lasting usually less than one year), telogen effluvium, (self-healing—a number of loose hairs on the hairbrush, can be brought on by stress & heparin, anticonvulsants & anti-thyroid meds), cicatricial alopecia (hair loss resulting from a condition that damages the scalp and air follicle such as syphilis, T.B., herpes zoster and discoid lupus, sarcoidosis, burns and radiation therapy.) and traumatic alopecia's. The diagnosis is usually based on a history and a physical exam. In some patients, punch biopsy may be necessary. Topically administered minoxidil is labeled for the treatment of androgenic alopecia in women. Corticosteroids and other agents are typically used in women with alopecia areata. Telogen effluvium is often a self-limited disorder. Because alopecia can be devastating to women, management should include an assessment for psychological effects.

Effective treatments for some types of hair loss are available. With some conditions, such as patchy hair loss (alopecia areata), hair may regrow in 90% without treatment within a year. Treatments for hair loss include medications and surgery. (There is no known cure for hereditary (aging) hair loss.)

If the hair loss is caused by an underlying disease, treatment for that diseases will be necessary. If a certain medication is causing the hair loss, you may have to stop that medicine for a few months.

**Medications** are available to treat pattern (hereditary) baldness. The most common options include: **Minoxidil (Rogaine)**. Over-the-counter (*nonprescription*) minoxidil comes in liquid, foam and shampoo forms. To be most effective, apply the product to the scalp skin once daily for women and twice daily for men. Many prefer the foam applied when the hair is wet.

Products with minoxidil help many regrow their hair or slow the rate of hair loss or both. It will take at least six months to prevent further hair loss and to start hair regrowth. It may take a few more months to tell whether the treatment is working. If it is helping, you'll need to continue using the medicine indefinitely to retain the benefits. Possible side effects include scalp irritation and unwanted hair growth on the adjacent skin of the face and hands.

**Finasteride (Propecia)** This is a prescription drug BPH in men. You take it daily as a pill. Many men experience a slowing of hair loss, and some may show new hair growth. It may take a few months to tell whether it's working. You will need to keep taking it to retain any benefits. Finasteride may not work as well for men over 60 Rare side effects include diminished sex drive and sexual function and an increased risk of prostate cancer. Women who are or may be pregnant need to avoid touching crushed or broken tablets.

Other medications include spironolactone (Carospir, Aldactone) and oral dutasteride (Avodart).

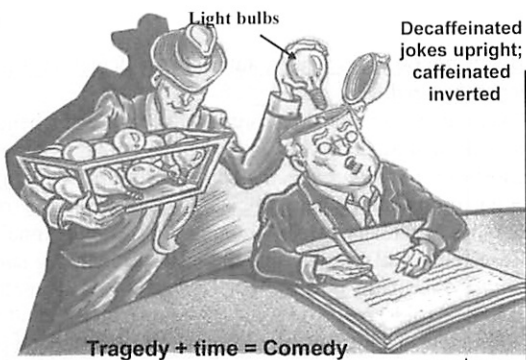
**Hair transplant surgery.** In the most common type of permanent hair loss, only the top of the head is affected. Hair transplant, or restoration surgery, can make the most of the hair you have left. This procedure doesn't require hospitalization. Hereditary hair loss will eventually progress despite surgery.

**Laser therapy...**The FDA has approved a low-level laser device as a treatment for hereditary hair loss in men and women. A few small studies have shown that it improves hair density. More studies are needed to show long-term effects.

**Home remedies...**Styling products that add volume, color...choose a hair style that makes a widening part less noticeable in women. Use wigs or hair piece extensions, or shave your head. Talk with a hair stylist for ideas.



LIGHTEN UP...



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(Use QRZ for e-mail addresses for security concerns.)

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Why do we say "hocus-pocus" when doing a magic trick? Because there once was a wizard named Ochus Bochus who did all sorts of tricks; he appears in Scandinavian mythology and "hocus-pocus" is just a corruption of his name.

Why do we call a gratuity a "tip?" Years ago in English inns and taverns it was customary for the patrons to drop a coin for the benefit of the waiters into a box placed on the wall. On the box was a little sign which said: "To insure promptness." Later joist the initials of the phrase were put on the box—T.I.P.

"Home Cooking." Where many a man thinks his wife is!

The deaf Italian bookkeeper...A Godfather finds out that his bookkeeper, Guido, has cheated him out of \$10 million dollars. Guido is deaf. That was the reason he got the job. It was assumed that Guido would hear nothing and would therefore never have to testify in court. When the Godfather goes to confront Guido about the missing 10 million, he takes along his lawyer, who knows sign language. The Godfather tells the lawyer, "Ask him where the money is." The lawyer, using sign language asks Guido, "Where's the money?" Guido signs back, "I don't know what you are talking about." The lawyer tells the Godfather, "He says he doesn't know what you are talking about." The Godfather pulls out a pistol, puts it to Guido's head and tells the lawyer, "Tell him if he doesn't tell me where my money is, I'll kill him!" The lawyer signs to Guido, "He'll kill you if you don't tell him." Guido trembles and signs back, "OK! You win! The money is in a brown briefcase, buried behind the shed at my cousin Bruno's house." The Godfather asks the lawyer, "What did he say?" The lawyer replies, "He says you don't have the balls to pull the trigger."

Lady patient to the Doctor inside his examination room. "Doctor can you please call my husband inside, I am not feeling comfortable." Doctor: "Trust me lady, I am a doctor and I am a gentleman. Lady Patient: "No, that's not the issue. Your receptionist is alone outside and my husband is neither a doctor nor a gentleman!"

AN ELDERLY PHYSICIAN is terminally ill and confronts his three sons, one whom is a dentist, one a minister and the third a politician. "I will need some money in the next world so I have a request that each of you go down to the bank and take out \$1,000 each and place it in my coffin when I pass. The old man dies and the dentist and the minister go to the bank and each places \$1000 in cash in the coffin. Along comes the politician, promptly takes out his checkbook and writes a check for \$3,000, drops it in the coffin and promptly pockets the \$2,000 in cash!

A young girl contemplates pregnancy, "I don't mind having a baby but I don't think I could handle 18 months of pregnancy with twins...."

Q. What is an "Australian kiss? A. It's the same as a French kiss, but 'downer."

Great Truths that adults have learned: Growing old is mandatory, growing up is optional

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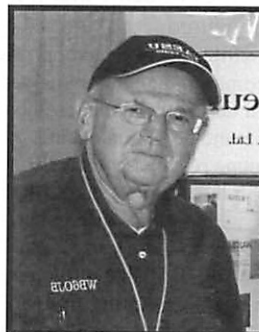
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Please send any corrections to above to MARCO, 14607 Brewster Dr. Largo, FL. 33774



MEDISHARE UPDATE
Arnold Kalan, WB6OJB

The charitable arm of MARCO is alive despite the pandemic. We are looking for donations, big or small, to fund our next project.

All donations are completely tax deductible and you will receive a note of thanks together with some wonderful MARCO seals that look very nice on QSL cards.

## A CURABLE DEMENTIA—A HAPPY STORY.....

(Excerpts from David Cox's fine article which appeared in the April 2021 edition of "Discover magazine.")

Anne was in the prime of her career—a trial lawyer for a major law firm—when she began to lose her mind. A fitness enthusiast, Anne was only 50 when she realized something was wrong.

*"The first thing I noticed was that my hands would begin to shake while I was sitting at my desk,"* she recalls. Perplexed, she went to see a neurologist at the Cleveland Clinic, who referred her for CT and MRI scans; both came back normal. She was given a diagnosis of *essential tremor*, a progressive but not life-threatening condition.

But within months, new symptoms began to appear: brain fog, memory loss, problems with reading and understanding even the simplest sentences. Looking back, she remembers feeling as if her brain were being slowly switched off.

Soon she began having seizures. Neurologists at the Cleveland Clinic initially suspected she had had a stroke. But they were left perplexed when all scans appeared normal. Desperate, her husband called one of her cousins, a surgeon at the Mayo Clinic. The cousin arranged for them to see Robert Brown, a neurologist who specialized in treating stroke patients.

By the time she reached the clinic in Minnesota, Anne was gravely ill and unable to feed herself. *"I remember vividly,"* says Brown. *"When I saw her, it was quickly apparent that she had far more going on than a stroke. It was a progressive neurological disorder. She had tremors, seizures, cognitive impairment, issues with coordination and speech."*

At that point, she'd been told no treatments were available—and she should get her affairs in order.

As the neurological colleagues raced to identify the causes of this mysterious illness, Anne's condition continued to deteriorate. Then Brown made a surprising discovery: The levels of antibodies in Anne's blood and spinal fluid were extremely high, a detail previously overlooked. This suggested that her condition was being caused by a malfunctioning immune system, and the symptoms could potentially be reversed with steroid treatment.

**Her MRI scan was essentially normal, but there were these various signs of autoimmunity," So we started with steroid therapy, which led to a striking improvement."** *"Just a month later,"* Brown stated, Anne's cognition became remarkably clearer. She was able to think and respond, her tremors were nearly gone, and she told her doctor that all her symptoms had started to melt away.

Over the coming weeks, and several doses of IV steroids later, Anne was able to walk, talk and eat by herself again. It turned out that she had autoimmune dementia, a type of dementia so little known that, at the time, few neurologists had even heard of it.

But over the past decade, interest in this condition has soared. To date, out of more than 200 different subtypes of dementia, it is one of the only forms that can be completely cured.

Autoimmune dementia is characterized by symptoms like memory loss and confusion—similar to symptoms of more common dementias such as Alzheimer's and vascular dementia. While most dementias are caused by a progressive, neurodegenerative disease, autoimmune dementia occurs when antibodies generated by an operative immune response to stress or infection, mistakenly bind to neuronal proteins in the brain. As a result, the disease progression tends to be much faster, with patients also experiencing more unusual symptoms such as seizures.

The condition was first diagnosed in the 1960s by British neurologist Dr. Walter Brain. He noticed that a number of people suffering from an autoimmune disease that attacked their thyroids also had memory loss and cognitive decline. He found that many of them improved with steroid treatment.

8

But nearly 60 years + later, autoimmune dementia still remains under recognized.

Over the past 15 years, researchers at Mayo and a handful of clinics in the U.K. and Spain have begun working on developing more precise diagnostics for autoimmune dementia. Tests are based on identifying certain neuronal antibodies associated with the disease, recognizing these types eventually helped pinpoint the cause of Anne's illness.

Research is still ongoing into the best treatment for autoimmune dementia. Like many others, Anne kept relapsing even after several rounds of steroids, before she was given an experimental treatment called intravenous immunoglobulin—infusions of blood plasma from healthy donors. These infusions helped neutralize the disease-causing antibodies. Eventually she recovered enough to return to work. *"Now more than ten years later after a two year ordeal, they say I'm cured."*

*"People who meet me today think I am your average working attorney. They have no idea—it's a truly miraculous story. I literally went from having one foot in the grave to being totally fine again."* A happy ending to an on-going potential tragedy

## THE "GREEN HEART PROJECT"

We all intuitively believe trees are good for you but we don't know if it will help the health of the population to be living among trees. Do trees absorb pollution and produce extra oxygen for humans to thrive?

The **Green Heart Project** instigated by the University of Louisville is attempted to find out by planting over 10,000 trees in Louisville, KY.. *"It's a clinical drug trial"* the scientists based at the Environment Institute like to say. *"But trees are the pill."* Oak trees, once plentiful in Louisville have succumbed to storms, disease and invasive beetles. Each day, about 150 trees perish in this city. Louisville has some of the highest rates of CV disease in the country along with dirty air which may be more than a coincidence.

The Green Heart Project, which began in 2018 is a gamble. Dozens of studies have examined the effects of trees on human's health yet they are all based on associations, meaning people's health improve when they were around trees but other factors—perhaps their exposure to trees occurred when they were also exercising—could not be ruled out.

Trees are dying in Louisville faster than they are being replaced. Meanwhile, other investigators around the country have launched studies attached to the Green Heart Project.

Meanwhile, in Liuzhou, China, the world's first "forest city" is in development. The plan there calls for nearly a million plants covering parks, hospitals, schools, offices and apartments besides the trees lining the sidewalks. An interesting subject that deserves watching.

YEAR	TOTAL CHECK-INS	AVERAGE PER SUNDAY
1998	694	14.46
1999	766	15.95
2000	1,035	20.29
2001	1153	22.60
2002	1383	26.15
2003	1489	28.63
2004	1534	29.50
2005	1517	29.17
2006	1531 (one extra Sunday)	28.89
2007	1591 (one extra Sunday)	30.02
2008	1524 (Only 46 nets)	33.14
2009	1533 (46 nets)	33.32
2010	1591 (44 nets)	36.22
2011	1514 (44 nets)	34.41
2012	1602 (44 nets)	36.41
2013*	1400 (44 nets) (New Freq)	31.82,
2014	(Year of the Terrorist) 1756 (47 nets)	37.36
2015	1722 (49 nets)	35.14
2016	1687 (46 nets)	36.67
2017	1536 (46 nets)	34.13
2018	1500 (43 nets)	34.88
2019	1786 (49 nets)	35.90
2020	2187 (45 nets)	48.60
2021	1114 (22 nets)	50.63

YEARLY  
GRAND  
ROUNDS  
NETS  
TOTAL  
ATTEND-  
ANCE



**HISTORY:** The idea of recombinant DNA was first proposed by Peter Lobban, a grad student at Stanford University Medical School. The first publications describing the successful production of recombinant DNA appeared in 1972. Stanford University applied for a patent on recombinant DNA in 1972 listing the inventors as Herbert W. Boyer (professor at the Univ. of California, San Francisco) & Stanley N. Cohen, (professor at Stanford.)

**CONTROVERSY:** Scientists associated with the initial development of recombinant DNA recognized that the potential existed for organisms containing recombinant DNA to have undesirable or dangerous properties. In 1975 these concerns were discussed and a voluntary moratorium on recombinant DNA research was initiated for experiments that were considered risky. This was widely observed until the National Institutes of Health developed and issued formal guidelines for rDNA work. Today, recombinant DNA molecules are not regarded as dangerous. However, concerns remain about some organisms that express recombinant DNA particularly when they leave the lab and are introduced into the food chain.

**Recombinant DNA (rDNA) molecules** are DNA molecules formed by lab methods of genetic recombination that bring together genetic material from multiple sources, creating sequences that would not otherwise be found in the genome.

Recombinant DNA is the name for a piece of DNA that has been created by combining at least two fragments from two different sources. Recombinant DNA is possible because DNA molecules from all organisms share the same chemical structure and differ only in the nucleotide sequence within that identical overall structure. Recombinant DNA molecules sometimes called CHIMERIC DNA because they can be made of material from two different species, like the mythical chimera. R-DNA technology uses palindromic sequences and leads to the production of sticky and blunt ends.

The DNA sequences used in the construction of recombinant DNA molecule can originate from any species. **For example, plant DNA may be joined to bacterial DNA or human DNA may be joined with fungal DNA.** In addition, DNA sequences that do not occur anywhere in nature may be created by the chemical synthesis of DNA, and incorporated into recombinant molecules. Using recombinant DNA technology and synthetic DNA, literally any DNA sequence may be created and introduced into any of a very wide range of living organisms.

Proteins that can result from the expression of recombinant DNA within living cells are termed recombinant proteins. When recombinant DNA encoding a protein is introduced into a host organism, the recombinant protein is not necessarily produced. Expression of foreign proteins require the use of specialized expression vectors and often necessitate significant restructuring by foreign coding sequences.

**Recombinant DNA differs from genetic recombination that the former results from artificial methods in the test tube, while the latter is a normal biological process that results in the mixing of existing DNA sequences in essentially all organisms.**

Molecular cloning is the lab process used to create recombinant DNA. It is one of two most widely used methods, along with polymerase chain reaction (PCR), used to direct the replication of any specific DNA sequence chosen by the experimentalist. There are two fundamental differences between the methods. One is that molecular cloning involves replication of the DNA within a living cell with PCR replicates DNA in the test tube, free of living cells. The other difference is that cloning involves cutting and pasting DNA sequences, while PCR amplifies by copying an existing sequence.

Formation of recombinant DNA requires a cloning vector, a DNA molecule that replicates within a living cell. Vectors are generally derived from plasmids or viruses, and represent relatively small segments of DNA that contain necessary genetic signals for replication, as well as additional elements for convenience in inserting foreign DNA, identifying cells that contain recombinant DNA and where appropriate, expressing the foreign DNA. The choice of vector for molecular cloning depends on the choice of host organism, the size of the DNA to be cloned, and whether and how the foreign DNA is to be expressed. The DNA segment can be combined by using a variety of methods, such as restriction enzyme/ligase cloning or Gibson assembly.

In standard cloning protocols, the cloning of any DNA fragment essentially involves seven steps: Choice of host organism and cloning vector, preparation of vector DNA, Preparation of DNA to be cloned, creation of recombinant DNA, introduction of recombinant DNA into the host organism, selection of organisms containing recombinant DNA, and screening for clones with desired DNA inserts and biological properties.

**(Don't give up—continue reading this is the future.)**


Following transplantation into the host, the foreign DNA contained within the recombinant DNA construct may or may not be expressed. That is, the DNA may simply be replicated without expression, or it may be transcribed and translated and a recombinant protein is produced. Generally speaking, expression of a foreign gene requires restructuring the gene to include sequences that are required for producing an mRNA molecule that can be used by the host's apparatus (e.g. promoter, translational initiation signal, and transcriptional terminator). Specific changes to the host may be made to improve expression of the ectopic gene. In addition, changes may be needed to the coding sequences as well, to optimize translation, make the protein soluble, direct the recombinant protein to the proper cellular or extracellular location, and stabilize the protein from degradation.

**Properties of organisms containing recombinant DNA.**

In most cases, organisms containing recombinant DNA have apparently normal phenotypes. That is, their appearance, behavior and metabolism are usually unchanged, and the only way to demonstrate the presence of recombinant sequences is to examine the DNA itself, typically using a polymerase chain reaction (PCR) test.

If the rDNA sequences encode a gene that is expressed then the presence of rDNA and/or protein products of the recombinant gene can be detected. Gross phenotype changes are not the norm, unless the recombinant gene has been chosen and modified so as to generate biological activity in the host. Additional phenotypes that are encountered include toxicity to the host induced by the recombinant gene produced especially if it is over-expressed or expressed within inappropriate cells or tissues.

In some cases, recombinant DNA can have deleterious effects even if it is not expressed. One mechanism by which this happens is insertional inactivation, in which the rDNA becomes inserted into a host cell's gene. In some cases researchers use this phenomenon to "knockout" genes to determine their biological function and importance. Another mechanism by which rDNA insertion into chromosomal DNA can affect gene expression is by inappropriate activation of previously unexpressed host cell genes. This can happen, when a recombinant DNA fragment containing an active promoter becomes located next to a previously silent host cell gene, or when a host cell gene that functions to restrain gene expression undergoes insertional inactivation by recombinant DNA.



**What you are reading is**  
*Difficult to comprehend but very worthwhile.....*

Recombinant DNA is widely used in biotechnology, medicine and research. Today, recombinant proteins and other products that result from the use of DNA are found in almost every western pharmacy, doctors office, medical testing lab, and biological research lab. In addition, organisms that have been manipulated using recombinant DNA technology, as well as products derived from those organisms, have found their way into many farms, supermarkets, home medicine cabinets, and even pet shops, such as those that sell GloFish and other genetically modified animals.

Many additional applications are found, some specific examples are: **Recombinant human insulin** is synthesized by inserting the human insulin gene into E.coli or yeast which then produces insulin for human use. **Recombinant human growth hormone (somatotropin)** administered to patients whose Pituitary glands generate insufficient quantities to support human growth and development.

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**THE TALKING DEAD...**Experiments on *digital personas*, (AI) replicas of former living people are underway They vary from animated robots to moving projections that gesture and speak like the real thing. Some "*immortal persona*s could thus continue a relationship with their families. More on this *digital immortality* as it develops.

PRESIDENT'S COLUMN:

Bruce Small, M.D. KM2L

Greetings Marconians! (typing that phrase makes me wonder whether we should adopt Marconi as an emeritus member. I suspect that he would not object).....



President Small was contacted and Stated he would be back with his comments in the next issue. He will be available to any questions on Sunday's Grand Rounds at 11 a.m. Eastern time on 14.342



Dutch Saint Martin

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QUEST FOR THE PERFECT CLOCK

Einstein, "The only reason for time is so everything doesn't happen at once."

Speed and gravity slow time down. The fastest man has gone is 25,000 mph in the Apollo program. You can go into the future but you cannot come back. If you go into the past and change things you will be knocked into a parallel universe.

Time runs 20% faster when you are older because your temperature is 1/2 degree lower.

Longitude was determined by clock and an almanac (in the 1700s—"Bowditch Tables") taken of the stars over Greenwich at a certain time. By taking the angle off the stars and comparing it to the almanac of the position of the stars over Greenwich one could determine longitude. You need an accurate clock and Mr. John Harrison after spending 4 years developed the chronometer.

In WW II, 3,000 people working in the Hamilton Watch Company in Lancaster, PA., made 11,000 chronometers over 3 years.

With a sextant you can get your position within 3,000 feet. With GPS you can locate yourself within 30 feet.

The Naval Observatory in Washington D.C. is accurate to 1/billionth of a second....50 clocks with the same temperature, humidity are connected and the average is what is given.

Atomic time—NASA, laser beams off the moon set up with Apollo 11. Also have 24 satellites with atomic clocks....NASA gets a signal from them and they are able to give an accuracy of 30 feet.

The Earth is slowing down 1/1000/second each day. In one year that amounts to 365/1000, or every 2.74 years = 1 second; every 164 years = one month; every 986 years=1 hr. every 23,671 years = 1 day.; every 8,639,915= 1 year.

ANY CORRECTIONS?

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Stolen car... A woman reported her car stolen and mentioned there was a car phone in it. The policeman taking the report called the phone and told the robber that answered that he had read the ad in the newspaper and wanted to buy the car. They arranged to meet and the thief was arrested.

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Married men live 7 years longer than the average never married men: Women live longer than men because they aren't married to women.

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"GOING FOR A HOP?" The aviation term HOP meaning a local flight evolved from log book entries in WWI meaning "High Operational Patrol."

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PEARL OF THE YEAR

Q. I am a 15 year old male whose father is bald. Will I become bald?

A. If your mother's father has normal hair you cannot inherit baldness from your father.

If your mother's father is bald, you have a 50% chance of becoming bald.

Women rarely have this problem because the trait (explains why there are so few "bald-headed females") is carried on the X chromosome of which she has two (the male is "Xy") and even if they have the baldness gene on one X they usually have the dominant non-bald gene on the other. Hemophilia and color-blindness follow similar patterns.

A high testosterone level in the male acts as a fertilizer for hair loss and that implies why bald-headed males can usually be found in the front row at Burlesque shows.

MARCO members are planning a vacation-style DXPeditionDXCation, the week after the Dayton/Xenia, HamVention May 24-31, 2022 to the Caribbean. This trip is designed for Marco members and their spouses (or friends). Plans are currently underway and we are trying to gauge member interest.

For the week of May 24-31, 2022, trip participants will fly into Dutch St. Maarten. There, we will have a beautiful villa and equip it for ham radio operating. The French Saint Martin (north) side of the island is only a short drive away and could provide a second DXCC entity to light up. Depending on participant interest, rental of a French side villa or hotel on either side of the island could be arranged. CQ WPX CW is the weekend of May 27th and we will enter a multi-op entry if you would like to participate.

Additional add-on-trips are being explored for a smaller group looking to extend their trip. There are ferries running daily to St. Bartholomew and Anguilla, with plans for part of our group to be on St. Bart's all or part of May 31-June 6, 2022 and Anguilla, June 6,2022 (part of which will overlap with the ARRL VHF contest focusing on 6 m.

If you are interested contact Secretary Jay Garlitz by phone 352 246 6003 or internet at jay.aa4fl@gmail.com

MARCO Grand Rounds Streaming Audio, by Thomas Keister MD N5RTF Here is how to access MARCO streaming audio and archived nets. The new url is: www.marcoaudio.net<http://marcoaudio.net> This address will be used for all nets: CW, Sunday SSB, and the Wednesday night COVID net.

This link will take you to a page with a built-in audio player, links for a variety of popular players, and a list of our archived nets going back several years.

The old links still work, and you can still program http://marcoaudioddns.net:8011/stream or <http://marcoaudio.ddns.net:8011/stream> into a standard music player on computer, phone, or portable device for a direct link to the live nets only. Feel free to share these links with anyone, MARCO member or not. No login or password is required. There is no cost. There is room for 100 listeners at a time. Again, no limit to downloads. Comments are appreciated.



BIRDS OF A FEATHER FLOCK TOGETHER...

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Send a Gift Membership To your HAM buddy

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Make sure he is either a doctor or a patient and that includes any radio

enthusiast who is vulnerable who likes radio and not sickness!

(Nobody seems to know exactly what it is!)

The 11-year old cryptocurrency was the first of its kind. It gets its name from the technology behind it—every transaction is encrypted by computer code, known as which eliminates the need for a middle-man or a central bank. (Or a new PONZI scheme where the fellow who gets in first wins!)

**What drives the price?** There is a finite supply of bitcoin. Only 21 million tokens will ever be made and nearly 19 million bitcoins are already in circulation so there are fewer than 3 million left to be created. And the rules around how the tokens are created—they're awarded to bitcoin "miners" who solve complicated math problems—along with other restrictions meaning a dwindling number of tokens will be issued in the coming years. The final bitcoin will be minted more than 100 years from now. Such scarcity is driving demand.

Over the past 12 months some investment professionals still view the virtual currency skeptically as it's "volatile and speculative." This is true for in just two weeks in January, bitcoin lost 25% of its value. During the pandemic sell-off in 2020, the price of bitcoin fell 49% from its peak to its trough and few holders are likely to forget its 83% fall between Dec. 2017 and Dec. 2015. Because bitcoin doesn't generate any cash flow or earnings—and never will—its price is driven purely by demand, so it's speculative. "Be prepared to lose the entirety of your principal!

That said, bitcoin could still have a small place in an investor's portfolio. But given the sky-high volatility, it should take up no more than 1% to 3% of your assets say many advisers.

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**CME RANKINGS AS OF July 5th, 2021**

**BOB CURRIER MARCO GRAND ROUNDS OF THE AIR**

4.342 MHz, Sundays, 11 a.m. Eastern, One Hour Cat. II CME

Call	HRS	Name	QTH
N2JBA	22	Ed	Amenia, N.Y.
KD4GUA	22	Warren	Largo, Florida
KD5QHV	22	Bernie	El Paso, Texas
N4TLC	22	Jerry	Boca Raton, F. Mass.
W9JMJ	22	Ted	Mass.
KC9CS	21	Bill	Largo, FL.
KM2L	21	Bruce	Clarence, N.Y.
WA3QWA	21	Marc	Chesapeake, Va
K6JW	21	Jeff	Palos Verges, C
WB1FFI	21	Barry	Syracuse, NY
NU4DO	21	Norm	Largo, FL.
N2OJD	20	Mark	Sydney, Ohio
N3IM	20	Keith	Milhouse, PA
KD5BQK	19	Linda	El Paso, TX
WB9EDP	19	Harry	Batavia, IL.
KK1Y	19	Art	Seminole, FL
N5AN	19	Bud	Lafayette, LA
KNOS	19	Dave	Virginia
N8CL	19	Chuck	Buffalo, NY
N4MKT	18	Larry	The Villages, F.
WB6OJB	17	Arnold	Pac.Pal. CA.
KE5SZA	17	John	Marietta, OK-
N6DMV	16	Paul	Torrance, CA
KE8GA	16	George	N. Carolina
N5RTF	16	Chip	New Orleans
W1RDJ	16	Doug	Cape Cod,
W5EXA	16	Mark	Cape Cod
KE0PIE	16	Trina	Boulder, CO.
N9GJ	16	Greg	Wisconsin
W4DAN	13	Danny	Cleveland, TN
KD4MD	14	Carol	USA
W6NJY	13	Art	Beverly Hills, CA
N3OMD	12	Tom	Buffalo, NY
W8LJZ	10	Jim	Detroit, MI
WW9F	10	Jeff	Chicago, IL.
W4EMB	10	Asif	N. Carolina
W6GZ	9	Bill	Hysteria, CA
KD4IZ	9	Jack	Maryland
WW9F	9	Jeff	Chicato, IL
N9RIV,	9	Bill	Danville, IL
AA1N	8	Gonzo	Maryland
KM3S	8	Allen	Boston, Ma.
K3IRY	7	Roy	Bedford, Ma.
AA4FL	6	Jay	Hawthorne, F.I.
N3MBJ	6	Abbott	Pennsylvania

If you have heard that red wine can help lower cholesterol, chances are you've heard of resveratrol—the much-hyped plant compound found in red wine.

Although commonly used as a dietary supplement and studied in lab models of human disease, there is NO high quality evidence that resveratrol improves lifespan or has a substantial effect on any human disease.

**BACKGROUND:** In the 1930s, researchers stumbled onto a surprisingly simple way to slow the biological forces of aging: cutting normal calorie intake by about a third. They found it boosts animals' life spans by 35%, and considerable evidence suggests that caloric restriction, or "CR", would slow human aging also. Now biotech ventures are rekindling interest in CR as they try to mimic its antiaging effects with medicines—such as resveratrol, thought to be a powerful "antioxidant."

As of 2021 there is no evidence of an effect of resveratrol on cancer, cardiovascular diseases, metabolic syndrome, lifespan, obesity, or cognition. Resveratrol is a phytoalexin, a class of compounds produced by many plants when they are infected by pathogens or physically harmed by cutting, crushing, or ultraviolet radiation.

In general, wines made from grapes of the Pinot noir and St. Laurent varieties show the highest level of *trans-resveratrol*, though no wine or region can yet be said to produce wines with higher concentrations than any other wine or region. Champagne and vinegar also contain appreciable levels of resveratrol as do peanuts, grapes and some berries. White wine is less viable.

Concerns and risks include increased bleeding when taken with anticoagulant drugs and potentially mild feminizing effects.

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**PEARLS**

**How can one help differentiate inflammatory bowel disease from IBS (Irritable Bowel Syndrome)**

**A. A normal C-reactive protein should help rule out Inflammatory bowel disease.**

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**PHANTOM VIBRATION SYNDROME**

**A letter from a patient:** "Last night about 3 a.m. I was awakened by what sounded like my cell phone ringing...thinking a family member had an emergency and that only they would be the ones that would call me at 3 a.m. I jumped out of bed, retrieved my phone only to find no-one had called! I was later informed of 'Phantom Vibration' or Ringing syndrome...what is it?????"

It is the perception that one's mobile phone is vibrating or ringing when it is not. The term is not a syndrome but is better characterized as a tactile hallucination since the brain perceives a sensation that is not actually present. Nine of 10 people suffer from this disorder! It is not rare.

Phantom ringing may be experienced while taking a shower, watching TV, or using a noisy device. Humans are particularly sensitive to auditory tones between 1,000 and 6,000 hertz, and basic mobile phones ring tones often call within this range. One scientist found that almost 9 out of 10 undergraduates at her college experienced phantom vibrations.

The earliest published use of the term *phantom vibration syndrome* dates to 2003 in an article in the *New Pittsburgh Courier*.

The cause of phantom vibrations is not known. Preliminary research suggests it is related to over-involvement with one's cell phone. Vibration typically begins occurring after carrying a phone between one month and one year. It has been suggested that, when anticipating a phone call, the cerebral cortex may be overactive.



# #130



# 12

MARCO, c/o Dr. Warren Brown  
14607 Brewster Drive, Largo, FL. 33774

**MARCO'S**



**"AETHER"**



**MEDICAL AMATEUR RADIO COUNCIL, LTD.**

### MARCO NET SCHEDULE

DAY	EASTERN TIME	FREQ.	NET CONTROLS
Any Day	On the hour	14.342	Hailing Frequency
Wednesday	8:30 p.m.	7.22	WB9EDP
Saturday	11 a. m.	Quad Net	WB9EDP,WA1EXA
Sunday	10:30 a.m.	14.342	(CW Net) N5RTF
Sunday	11 a.m.	14.342	KD4GUA

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Web Site: <http://www.marco-ltd.org>  
MediShare Web Site: <http://www.medishare.org>

Your Renewal Date Is January 1 of each year.

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Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Call Sign \_\_\_\_\_ Type License: \_\_\_\_\_

Phone: \_\_\_\_\_

Internet Address: \_\_\_\_\_

Your Birthday \_\_\_\_\_ (Year optional.)

Member ARRL? \_\_\_ (Y,N)

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Jay Garlitz, Secretary,  
P.O. Box 1333, Hawthorne, FL., 32640

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In this form it gives more variety, is more economical and appears to please the most members.

\*\*\*\*\*

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Not available at press-time.

\*\*\*\*\*

### NO RADIO, NO ANTENNA?

Keep in touch with MARCO on "listserv." E-Mail your request to join to BruceSmall73@gmail.com If on the list simply contact marco.ltd@googlegroups.com And/Or

Tune in to Marco Grand Rounds on your computer: [www.reliastream.com/cast/start/keister](http://www.reliastream.com/cast/start/keister)

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