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CUSHING SYNDROME

BUFFALO HUMP SPINE, WEIGHT GAIN, STRIAE, DEPRESSION, HYPERTENSION, & MENSTRUAL IRREGULARITY, ALL SYMPTOMS

No single sign or symptom of Cushing syndrome can be used to make a diagnosis. This is because Cushing syndrome may look different in each person. Depending on the cause and other factors, the symptoms of Cushing syndrome may vary in type and severity.

Also, it is normal for cortisol levels to rise and fall throughout the day. Although there are several tests to measure cortisol levels, this normal fluctuation may make it challenging to determine whether a person has chronically elevated cortisol levels. Multiple testing methods to measure your cortisol levels may be used. The results will be considered along with a physical evaluation to confirm a diagnosis of Cushing syndrome.

Excess cortisol may make day-to-day activities extremely difficult, as it may take a toll on the body. Everyone experiences these symptoms differently and at varying levels of severity.

Physical symptoms, like weight gain around the center of the body, easy bruising, bone fractures, muscle weakness, reddish purple stretch marks, red or round faces, sexual dysfunction, uncontrolled blood sugars, elevated blood pressure and blood clots. Also, facial hair in females, (*the bearded lady in the circus*), depression, irritability, trouble sleeping, fatigue and problems thinking and remembering things.

The 3 most common cortisol tests include overnight 1 mg dexamethasone suppression test, late-night salivary cortisol test and 24-hour urinary free cortisol. Treatment options include surgery, radiotherapy and medications.

_____? YES. For this reason, the Endocrine Society recommends further evaluation by an endocrinologist who specialize in diseases of the endocrine system.

What is cortisol? Cortisol, sometimes called the stress hormone, is involved in many processes in the body including stress response, immune response and metabolism.

Cortisol and the sleep-wake cycle...The sleep-wake cycle, also called the diurnal rhythm, influences the release of cortisol and other hormones. Cortisol is released in the body at different times throughout the day and night. Unless a person has an unusual sleep pattern (for example, shift work at night or regular sleep disturbances), cortisol should typically be at its lowest levels at night and its highest levels in the morning. This regular rise and fall in cortisol levels supports the body's natural tendency to feel tired at night and alert in the morning.

The HPA axis...The production of cortisol is controlled by the interaction between the **hypothalamus, pituitary, and adrenal glands**. This interaction is known as the **HPA axis**. Cortisol enters cells and binds to glucocorticoid receptors (GRS), which are located throughout the entire body. By binding to the GRS cortisol makes changes so the body can respond to stress and other conditions in the environment.



Harvey W. Cushing, M.D., (1869-1939) was a noted pioneer in the field of neurosurgery. He graduated from Yale in 1891 and earned his medical degree from Harvard in 1895. He interned at Mass General and then went on to do 4 years of post-graduate work at John Hopkins Hospital. He introduced a method of operating on the brain with local anesthesia.

He described Cushing syndrome in 1932 and first described it as "diabetes of bearded women," due to the masculinizing effect of adrenal tumors. Note cigarette in his left hand. He died of acute M.I. in 1939 at the age of 70.

LATE BREAKING NEWS

A final note as News Editor on Page 4. The min-term congressional election is finally over! People will start talking to each other again....

We are in need for a new net-controller for Grand Rounds. All you need to qualify is a voice and preferably a professional degree to qualify for Category 1 credits. It would be best to have volunteer lecturers to spread the upcoming trends.

Jay AA4FL has agreed to continue on with *Aether* on-line every even month. The printed version apparently has lost its appeal in today's world and will be discontinued subject to resurrection at the Marco Annual meeting in El Paso this coming Spring.

MARCO NET SCHEDULE

WRITE TO US!
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Letters may be edited for
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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.

How cortisol is produced in the body... Step #1: Hypothalamus signals to the pituitary. Step #2: Pituitary signals to adrenal glands. Step #3: Adrenal cortex releases cortisol. Step #4: Cortisol binds to cells. Step #5: Hypothalamus detects cortisol levels. Step # 6 Pituitary decreases signaling to adrenal glands. Step #7: Adrenal glands decreases cortisol production.

This tightly controlled feedback loop connects the brain to the rest of the body, which helps maintain *homeostasis*. Just like a thermostat adjusts the heating and cooling systems in a house to maintain an even temperature, the HPA axis adjusts the levels of cortisol in the body.

What causes excess cortisol? Having too much cortisol in the body is known as *hypercortisolism*, or *Cushing syndrome*. Typically, the feedback loop of the HPA axis regulates cortisol production and activity within the body. However, sometimes these hormone signals are disrupted and excess cortisol may circulate in the body. If cortisol activity does not go back to normal, this may lead to a number of serious health issues over time.

Exogenous hypercortisolism An excess of cortisol caused by factors outside the body is called *exogenous hypercortisolism*. Certain medications may affect cortisol levels by acting similarly to cortisol in the body. These medications, called *corticosteroids* are commonly used to treat conditions such as asthma, allergies, multiple sclerosis, and arthritis. When exposed to these medications long-term, the body may sometimes develop symptoms of hypercortisolism.

Endogenous hypercortisolism...An excess of cortisol caused by factors inside the body is called endogenous hypercortisolism. Unlike corticosteroids and other medications that act like hormones in the body, endogenous hormones are produced by the body itself. The cause of excess cortisol is typically a nodule located on either the pituitary or adrenal glands. These nodules may also occur elsewhere in the body (called an ectopic source).

What causes Cushing syndrome? Depending on the source of excess cortisol, the diagnosis may have a more specific name. Cushing syndrome is an overarching term covering several distinct sources of excess cortisol. Cortisol-producing nodules—whether located in the pituitary, adrenal glands, or elsewhere in the body—may interfere with hormonal signaling in the HPA axis. This affects the body's normal tightly controlled feedback loop, causing excess cortisol production and disrupting homeostasis.

Pituitary Cushing syndrome (also called Cushing disease). Cause: A nodule in the pituitary gland causes increased production of the hormone ACTH, which stimulates the adrenal glands to make excess cortisol. This disrupts the feedback loop that controls cortisol levels within the body.

Signs and symptoms of Cushing syndrome...Almost every cell in your body contains receptors that bind with cortisol. These receptors (called glucocorticoid receptors or GRs) allow cortisol to enter the cell and change its behavior. Once inside, cortisol makes changes so the body can respond to stress and other conditions in the environment. Although this is important, having too much cortisol may have negative effects throughout the body.

Symptoms...vary from person to person: Poorly controlled type 2 diabetes mellitus, obesity and insulin resistance. Insomnia, high blood pressure and cholesterol, repeated infections, infertility, hirsutism, osteoporosis and fractures, easy bruising and muscle weakness.

Different source, different signs and symptoms:

Adrenal Cushing syndrome...Appearance: May not cause physical changes more commonly associated with overt cases. They may be unable to control the blood sugar; worsening heart and circulatory issues. Often caused by a nodule on the adrenal glands that secretes excess cortisol.

Pituitary/Ectopic Cushing syndrome...Fat buildup in the face called *moon facies*. A buffalo hump. Stretch marks that are reddish purple. Often caused by a source that affects the signaling of the adrenocorticotropic hormone (ACTH) such as a nodule located on the pituitary or elsewhere in the body.

Who should be screened? _____. Those with bone fragility and low bone density. All those with adrenal & pituitary nodules.

How is Cushing's diagnosed? Measure cortisol levels. Source of excess cortisol is determined. Dexamethasone suppression test, You will take a 1-mg dexamethasone tablet at 11 pm. The following morning draw blood to measure cortisol levels. If your cortisol levels does NOT go down inform the doctor of your meds. Other tests: Late-night salivary cortisol. Urinary free cortisol...If your test results confirm you have excess cortisol, your treatment may depend on a number of factors.

How is Cushing syndrome treated? Treat the underlying cause— elevated levels of cortisol—by surgery, radiotherapy, & medication.

Surgery: Trans sphenoidal surgery— on the pituitary or/and adrenal glands. An adrenalectomy, removing one or both adrenal glands (if failure with trans sphenoidal surgery). People who have a bilateral adrenalectomy require lifelong meds to replace the cortisol their bodies can no longer produce.

Why are there so many terms for Cushing syndrome? For example, Cushing disease, hypercortisolism? Cushing syndrome is an overarching term that describes the widespread signs and symptoms associated with having excess cortisol in the body.

Depending on the source of excess cortisol in a person's body, the condition may have a more specific name. For example, Cushing disease is a form of Cushing syndrome caused by a nodule on the pituitary gland.

Why is Cushing syndrome difficult to diagnose? This is because Cushing syndrome may look different in each individual person. Also, it is normal for cortisol levels to rise and fall throughout the day. Although there are several tests to measure cortisol levels, this normal fluctuation may make it challenging to determine whether a person has chronically elevated cortisol levels. The doctor may recommend using multiple testing methods to measure your cortisol levels. The results of these tests will be considered along with a physical evaluation to confirm a diagnosis of Cushing syndrome.

Hirsutism (*female facial hair*) can also be present in polycystic ovarian syndrome, adrenal hyperplasia, elevated testosterone levels, congenital adrenal hyperplasia and certain medicines such as finasteride and minoxidil

(The above was presented as the lecture of May 15, 2022 on Marco Grand Round of the Air, for 1 hour Cat. 1 CME credit.)

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DRUG-INDUCED SEXUAL DYSFUNCTION IN WOMEN

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Female sexual dysfunction—defined as a sexual problem associated with personal distress—occurs in about one in eight women.

There are several forms of sexual dysfunction in women, including a lack of sexual desire, impaired arousal, inability to achieve an orgasm and pain with sexual activity

Importantly, medications are a common cause of sexual dysfunction in women. Knowing which drugs cause sexual dysfunction will allow women to take steps to prevent or minimize these common, often troubling adverse drug effects.

Sexual dysfunction is a well recognized adverse effect of selective serotonin reuptake inhibitors (SSRIs) such as citalopram (CELEXA) and fluoxetine (PROZAC). In fact, sexual dysfunction is one of the most common adverse effects of SSRIs, estimated to occur in half of patients treated with these drugs.

SSRIs are a family of drugs that, except for fluvoxamine (LUVOX), are all approved by the FDA for treating major depressive disorders. Various SSRIs also are approved by the FDA to treat one or more other psychiatric disorders, including obsessive-compulsive disorder, bulimia, panic disorder, generalized anxiety disorder, social anxiety disorder and post-traumatic stress disorder.

The product labeling advises prescribers of these medications to ask patients about their sexual function prior to starting the drugs and to inquire about changes in sexual function during treatment.

Other antidepressants, including monoamine oxidase inhibitors (MOAs; for example, phenelzine (NARDIL), serotonin-norepinephrine reuptake inhibitors (SNRIs; for example, venlafaxine (EFFEXOR SR) and tricyclic antidepressants (for example, nortriptyline (PAMELOR), also may cause sexual dysfunction in women, including decreased libido and delayed or absent orgasm with use of MOAs and SNRIs

However, sexual dysfunction with these drugs has been less frequently studied than SSRI-induced sexual dysfunction.

Importantly, major depression itself can cause decreased libido and other forms of sexual dysfunction in women, and treatment with antidepressants can improve these depression-related symptoms.

Antipsychotic medications can cause sexual dysfunction in women, particularly problems with achieving an orgasm. These medications block dopamine, a chemical substance in the brain known as a neurotransmitter which may play a role in sexual function. Antipsychotics also can increase levels of the hormone prolactin, which may affect sexual function by suppressing ovarian hormones.

First-generation antipsychotics (such as haloperidol (HALDOL) generally increase prolactin levels more than second-generation antipsychotics (such as quetiapine (SEROQUEL) and therefore may be more likely to cause sexual dysfunction.

Hypertension drugs...Drugs known as alpha adrenergic agonists, which are used to treat hypertension, may cause sexual dysfunction in females. For example, clonidine (CATAPRES-TTS, NEXICLON XR) which has been designated as Do No Use, may cause loss of libido and decreased sexual activity.

If you experience symptoms of sexual dysfunction, review all of your meds with your doctor to determine whether any of them may be contributing to your problem. Do not stop taking any prescription medication without first talking to your doctor. Be aware that other drugs not listed here can cause sexual dysfunction in women.

(Information from above was taken from "Worst Pills, Best Pills News" July 2022.)

WHEN DID SAILORS BEGIN USING LATITUDE & LONGITUDE TO NAVIGATE?

It was after Englishman John Harrison presented his ship's chronometer to London's Board of Longitude in 1736. The instrument was accurate to within 1/10th of a second per day (1.3 miles of longitude). Since it was set to the time of 0 degrees longitude (Greenwich time), it enabled navigators to fix longitudinal position by determining local time. Even though Harrison's award-winning invention weighed 66 pounds, complicated and delicate, it was improved upon so that it could be used on any sea-faring vessel under any weather conditions.



DOES TALCUM POWDER CAUSE CANCER?

Talcum powder is made from talc, a mineral made up mainly of magnesium, silicon and oxygen. As a powder, it absorbs moisture well and helps cut down on friction, making it useful for keeping skin dry and helping to prevent rashes. It is widely used in cosmetic products such as baby powder.

In its natural form, some talc contains asbestos, a substance known to cause cancers in the lungs when inhaled. Since 1976 voluntary guidelines by a trade association stated that all talc used in cosmetic products in the U.S. should be free from detectable amounts of asbestos.

When talking about whether or not talcum powder is linked to cancer, it is important to distinguish between talc that contains asbestos and talc that is asbestos-free. Talc that has asbestos is generally accepted as being able to Cause cancer if it is inhaled. The evidence about asbestos-free talc is less clear

Studies in people...It has been suggested that talcum powder might cause cancer in the ovaries if the powder particles (applied to the genital area or on sanitary napkins, diaphragms, or person's memory of talc use many years earlier.condoms) were to travel through the vagina, uterus and fallopian tubes to the ovary (a very rare occurrence.)

Many case-control studies have found a small increase in risk. But these types of studies can be biased because they often rely on a prospective cohort studies, which would not have the same type of potential bias, have generally not found a significant increase in ovarian cancer risk overall.

The World Health Organization (WHO) classifies talc that **contains asbestos** as "carcinogenic to humans." Based on the lack of data from human studies and on limited data in lab animal studies, WHO classifies inhaled talc NOT containing asbestos as "not classifiable as to carcinogenicity in humans." Based on limited evidence from human studies of a link to ovarian cancer, WHO classifies the perineal use of talcum based body powder as "possibly carcinogenic to humans."

In May of this year Johnson & Johnson announced it will discontinue sale in the U.S. and Canada of talcum -based baby powder, which it has sold since 1894. America's litigation-friendly legal system has subjected the company to a flood of baby-powder lawsuits thus making it too expensive to sell in the U.S.

The first wave of lawsuits alleged that the product caused ovarian cancer—a claim the best medical science doesn't support. A January 2020 study in the JAMA followed more than 250,000 women for 11 years and found no significant ovarian-cancer risk associated with talcum powder use. The FDA has consistently found insufficient evidence to mandated an ovarian-cancer warning label on talcum powder.

Juries often rejected these lawsuits: Johnson & Johnson won at least 80 jury verdicts in 2019. Some juries have gone for cancer patients too—at least five in 2019—sometimes levying giant damage awards. Between 2016 and 2018, five different juries in St. Louis returned verdicts totaling almost \$5 billion. Two-thirds of the early series of talcum cases were filed in St. Louis, half a country away from J & J's H.Q. in New Jersey, as lawyers exploited historically faulty lax venue rules. Missouri appellate courts eventually reversed verdicts in four of the five cases, in which plaintiffs had hailed from Alabama, California, South Dakota and Virginia.

Despite longstanding efforts by J & J and other manufacturers to eliminate asbestos entirely from consumer products, a small number of tests over the past five decades have detected some asbestos in talcum powder samples.

These readings may have been false positives as they were not replicated by additional testing. No matter: Asbestos lawyers have J & J as their latest deep-pocketed corporate defendant. And a necessary one too, as other lawsuits bankrupted all the actual asbestos manufacturers long ago.





A final note from Warren: MARCO is facing difficult times...with the illness of Editor Warren Brown KD4GUA it is confronted with several problems. Who will carry on *Aether*? Our secretary, Jay Garlitz AA4FL luckily filled the gap during the pandemic when Warren was hospitalized for 8 days and lost his lovely wife Greet to the disease. Jay's version of on-line didn't contain printing and mailing handicaps. Soooooo for the coming months Jay will now present the on-line version of *Aether* every other month. Problem solved?

What about Grand Rounds of the Air? We need volunteers. Harry WB9EDP is happily pitching in with his timely weekly comments. Are there any other entrepreneurs out there that could double with Harry? It has been the custom, but not the mainstay, of the one credit hour CME (Current Medical Education) being edited by a professional. Perhaps we can solve this in El Paso at the annual Marco meeting.

If there is talent out there speak up! Running a net exhibits two advantages: It strengthens your own medical knowledge and does likewise to the listeners—double glory!!

Now, my opinion of MARCO: After 30 years of membership I hold out this advice: #1. Successful management of medicine, in a very changing-world is necessary in order to maintain proper judgement of life-saving decisions. (*we cannot afford to get "rusty."*) This understanding is not only positive it is demanding! (*and sometimes frustrating.*) In order to maintain a healthy family life, social life, and professional life—one is stretched, sometimes to the breaking point. (*Chuck Lind, N8CL, our treasurer is a good example of a successful connoisseur using all three as one—the family are get together medical educational social hams.*)

Basically, all of us in this profession, are, or will be moderate or temporary obsessive compulsives to succeed. We need a straight fast road, not a crooked slow one, to get to our goals as soon as practical. Then the fun begins...Marco's, Bruce, Mark, Linda, Bernie, Keith, Mary, Paul, Stu, Jeff, Chipper, Bob, Harry, Darline, Dave, , Bill, Norm, , Carl, Art, Bud, Larry, George, , Jim, Danny, Michaeline, Jerry, Arnold, Chuck, Dave., Barry join in—from all over this wonderful USA! (*get together to help others as well as themselves in a wonderful organization—that should outlive all of us—MARCO!*)

All I can say is "I'm glad I joined—let's keep her rolling! So Long you wonderful medical hams, it was a privilege to have known all of YOU.

Warren KD4GUA



EDITOR'S NOTE: Walter Winchell began broadcasting in 1933 to an audience of 25 million people. The Winchell style was unmistakable. He talked rapidly at 197 words per minute...the voice was high-pitched and not pleasant to the ear; but it was distinctive. The staccato quality made every item compelling. He claimed he talked so fast because if he talked more slowly people would find out what he was saying...he began his radio program with a series of dots and dashes operating the key himself. Telegraphers throughout the country complained that what Winchell tapped out made no sense. He realized he hadn't the faintest knowledge of Morse code but he refused to have an experienced telegrapher provide the sound effects for him. He wrote like a man honking in a traffic jam.

Does bilingualism make you smarter? Perfect fluency in a second language can make someone seem so worldly and intelligent...but does knowing more than one language really make a person smarter? A vast online study suggests that bilingualism can be handy but doesn't make you a whit more intelligent. The study enlisted 11,000 people to complete 12 on-line cognitive tests. It found almost no cognitive differences between people who speak just one language and those who said they speak at least two.

The coronal virus Test Kits in use in the USA detect viral genetic material—RNA—which can be infectious material or noninfectious fragments. Once the patient has recovered and the RNA has been cleared, the tests will be negative. If we're trying to ascertain what proportion of the population has been infected and experienced asymptomatic, mild or more serious infections, such post-infection testing yields "false negatives." Additional essential information will need to come from "serological tests" that measure antibodies in blood, which will tell us whether a person has been recently infected with SARS-CoV-2 and recovered (Note that antibodies take about 10-14 days from exposure to the virus to appear.)

In a new trial of 248,000 hypertensive patients over 3.7 years revealed risk of cardiovascular death was reduced by 15%-22% with ACE (*angiotensin-converting enzyme*) inhibitors, CCBs (*Calcium Channel blockers*), ARBs (*angiotensin-receptor blockers*) and diuretics. ACE inhibitors, CCBs and beta-blockers reduced MI risk by 20%-28%. All classes of meds were associated with a 19%-39% reduced risk of stroke.

Chiropractic...The American Medical Society (AMA) has a long history of opposition to chiropractic. In 1967, the AMA ruled that it was unethical for physicians to associate professionally with chiropractors. In 1987, however, a federal judge ordered the AMA not to interfere with relationships between the two. In 1992, the AMA changed its code of ethics to allow referral of patients to chiropractors whenever the physician feels it may benefit the patient. Many hospitals now allow chiropractors to practice in their facilities. The granting of hospital privileges has led to the development of a new procedure called "manipulation under anesthesia." This procedure, performed while the patient is under anesthesia, allows the chiropractor to make more vigorous adjustments of the spine.

The chiropractic method was founded by Daniel David Palmer, an Iowa merchant, in 1895. Two years later, Palmer established the first college of chiropractic in Davenport, Iowa. Today, the US has 14 accredited chiropractic colleges. Each offers a four-year program that lead to the degree of Doctor of Chiropractic (D.C.).

Drive-in Movies making a comeback...The high-water mark for drive-in movies came in 1958 when there were 4,063 in the U.S. Last year there were only 305...But, during the pandemic Americans are giving them a fresh-look! Pottstown, PA's Sunnybrook Ballroom's parking lot is now a portable drive-in—\$20/car, a pumped-up inflatable screen, a good show and no contamination from the nasty viruses!

Eating red meat increases your risk of heart disease, but not mainly because it raises cholesterol and blood pressure. A new study suggest that a more important factor may be gut bacteria, reports *The Times (U.K.)*. Researchers followed 4,000 people, all over age 65, for 12+ years...they found daily red meat increased risk of heart disease by 22%—and that much of that added risk came from chemicals that gut bacteria produce. Trimethylamine N-oxide metabolite was the key culprit and different levels of it in people's gut microbiomes makes some more susceptible to damage from red meat than others.

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Mohs surgery is considered the most effective technique for treating basal cell and squamous cell carcinomas. The procedure is done in stages, including lab work, while the patient waits. This allows the removal of all cancerous cells for the highest cure rate while sparing healthy tissue and leaving the smallest possible scar.

It began as a technique called chemosurgery, developed by Frederic Mohs, in the late 1930s, but was not widely known. In the mid 1960s, Perry Robins, MD, studied the procedure with Dr. Mohs, and recognized that it had great potential for dermatology. He brought the technique to New York University, where he established the first fellowship training program to teach dermatologists this skin cancer surgery. Dr. Robins helped advance the procedures into what is now called Mohs surgery and went on to teach and promote it around the world.

The procedure is done in stages, all in one visit, while the patient waits between each stage. After removing a layer of tissue, the surgeon examines it under a microscope in an on-site lab. If any cancer cells remain, the surgeon knows the exact area where they are and removes another layer of tissue from that precise location, while sparing as much healthy tissue as possible. The doctor repeats this process until no cancer cells remain.

During the lab analysis the surgeon cuts the tissue into sections, color codes them with dyes and draws a map of the surgical site. In the lab, a technician freezes the divided tissue, then cuts very thin horizontal slices, like a layer cake. The slices are placed on microscope slides, stained and covered.

Using a microscope, the surgeon examines and, if any cancer cells remain, marks their location on the map. The doctor then lets you know whether you need another layer of tissue removed.

Back in the operating room, the surgeon injects more anesthesia if needed and removes another layer of skin, precisely where the cancer cells remain, based on the map. Then while you wait, the lab work begins again. This entire process is repeated as many times as needed until there are no more cancer cells.

If more than one or two rounds are needed, the entire process can take up to several hours, so be prepared for that.

The use of Mohs surgery to treat melanoma, still relatively new, continues to evolve. For many years, melanoma was not treated with Mohs, because atypical melanocyte (the pigment cells where melanomas can develop) were difficult to assess using frozen sections. More recently, however, special stains called immunostains allow the Mohs surgeon to see possible residual tumor that may not be clearly visible with regular staining. For example, surgeons have begun using the MART-1 (Melanoma-associated Antigen recognized by T cells) stain to evaluate margins on Mohs frozen sections to diagnose and treat melanoma; MART-1 is especially sensitive and specific for melanocytes.

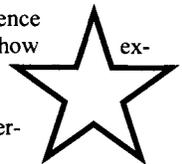
Today, a far greater variety of therapies exist, from topical medications and cryosurgery (freezing the tumors with liquid nitrogen) to lasers. However, one technique that came of age in the late 60s stands out above the rest: Mohs surgery is currently the most precise, tissue-sparing method for the treatment of basal cell and squamous cell carcinomas.

In 1936, after training as a surgeon, Dr. Mohs began performing the procedure, initially dubbed "chemosurgery" ("chemo" referring to the zinc chloride paste), on human skin cancer patients. It was a scrupulous process that could take days. Once clinical examination revealed a potential cancer, he would apply dichloroacetic acid to the area believed to be involved; this would allow him to scrape away the protein keratin from the epidermal layer of the skin so that the zinc chloride paste could penetrate the area. The paste would then be applied, fixing the tissue. A protective dressing would be placed over the treated site to enhance penetration and absorption of the paste.

When adequate fixation was achieved many hours later or by the next day, Mohs would remove the dressing and, using a scalpel, would surgically excise a saucer-shaped layer of the fixed tissue. He cut the specimen into sections about 1 cm square in area and 2 mm thick, and sketched a



5 corresponding map of the sections, keeping each section separate and numbered to indicate its location on the map. He also painted the adjoining edges of the sections with different dyes to differentiate the superior edges from the inferior. Reference marks were also made on the original surgical site to show exactly where each color-coded section had originated. Thus any further surgery that might be required would occur only in the part of the surgical site where a cancerous section had been found.



Frozen sections were prepared of the undersides of each excised section and they were mounted on slides and examined under the microscope. Each slide was labeled to indicate the particular section's position on the map. If sections showed no evidence of cancer, no further surgery would be required. However, if a section revealed cancer cells, surgery would continue only in its corresponding portion of the surgical site. The zinc chloride paste would be reapplied to that area, and the entire procedure repeated, until no more cancer cells remain in any specimens. Five to seven days later, an "eschar" (a scab on the fixed tissue site) would separate, leaving healthy, healing tissue behind. Surgical repair of the wound could then be performed.

When Dr. Mohs first spoke of chemosurgery, he was greeted with nearly universal dismay and skepticism. Most doctors at that time had no idea what Mohs surgery was!

Unfortunately, the technique as it first existed had certain drawbacks, above all a procedure time that could span several days and severe discomfort accompanying the zinc chloride paste application.

The "Fresh-Tissue Technique"...In 1953 Dr. Mohs tried a "fresh-tissue" version of chemosurgery. He was treating a patient with an eyelid basal cell carcinoma, and to avoid irritating the eye, he skipped the zinc chloride paste. He administered local anesthesia, and without having to wait for a fixative to start, he was able to immediately excise one thin layer of fresh tissue, section it in the usual way, map it, and examine it under the microscope. Finding tumor cells at the margins, he was again able to excise another layer of tissue immediately.

Encouraged, Dr. Mohs began to use this new technique, primarily for skin cancers around the eye. After learning of the technique and excited by the possibilities, surgeon Ted Tromovitch in 1963 began using the fresh-tissue technique on more and more body sites. Leaving the zinc chloride out became known as "*chemosurgery fresh tissue technique*". He reported a 97.2% cure rate for 532 lesions.

Avoiding the zinc chloride mixture caught on...it eliminated the discomfort of the zinc chloride paste, and you could resolve a skin cancer case in one day instead of many days. Finally, in 1974 the term "*micrographic surgery*" was used and the procedure was officially changed to "*Mohs micrographic surgery*" but for brevity's sake, many just call it *Mohs surgery*.

(The lecture on Mohs surgery was presented on MARCO GRAND ROUNDS, July 10, 2022.)

KEEPING ORGANS ALIVE... Researchers have used a cutting-edge technique to restore a heartbeat and other cellular function in pigs an hour after their deaths. The successful experiment suggests that cells don't die as quickly as previously assumed—which could mean that human organs earmarked for transplant can be preserved for much longer. Researchers from Yale used the OrganEx perfusion system, similar to a heart-lung machine, to pump synthetic fluid through the pigs' circulatory system, helping distribute oxygen and prevent blood clots. The researchers found that certain key cellular functions were still working in the heart, liver and kidneys up to six hours after treatment.

The science is still at an early stage, but if the same method can be applied to humans it would massively extend the window for organ transplants. "*The technology has a great deal of promise,*" co-author Stephen Latham tells CNN.com. "You could keep the organ from a deceased donor, and hook it up to the perfusion technology, and perhaps then be able to transport it long distances over a long period of time to get it to a recipient who needs it."



PATIENTS ARE NOT JUST A NUMBER

(Excerpts from Dr. John D. Young's fine article "Ask the Doctor" which appeared in the June 2020 edition of the "Feather Sound (Florida) News.")

Years ago, I learned from a professor that if you listen to a patient long enough they will tell you what their real problem is and how to fix it. Listening to a patient, however, is a lost art in today's medicine. Today, it is common for the patient to listen to the doctor and do as the doctor says.

I had a male patient who over the course of a year felt so-so, but he has not felt great. I tried everything I could think of but he would still feel bad half the time. Then, he happened to tell me a story about how as a child he loved salt and could never get enough of it. Then, it hit me. I checked his labs—his sodium level was 143; the normal range being anywhere from 136 to 145. Although his level was fine, this normal range is based on a "Bell Curve." This means that here may be people who need higher or lower sodium levels to feel better. So, I decided to give him an I.V. of normal saline. Within minutes, he was a new man. He felt alive, he felt great, and his sodium level was 148. I ended up putting him on salt tablets and it's turned his life around. I learned my lesson that what may be so-called "normal," may not be normal for everyone.

The same principle applies to thyroid labs. Most doctors follow a patient with thyroid disease by following TSH levels. If the TSH is normal than a person's thyroid medicine is correctly prescribed. The problem is that the actual thyroid hormone is Free T-3. My practice is filled with people who have been told their TSH levels are fine yet they still have no energy, loss of hair, dry skin, fatigue etc. In my practice, I check the Free T3 level and it is usually very low or in the low to normal range (from 2.0 to 4.2). When the T3 is low, I typically put them on actual T3 and as I get that level up anywhere from 3.5 to 4.2 or higher, their symptoms go away.

Patients are not numbers, they are people with unique genes and different metabolisms. These labs are the **Bell Curves** to set so-called "normal" ranges; and may be you are not in the 80% of the population to which this "normal" range applies to. Maybe you are in the 20% that may function best when your labs are not in the so-called "normal" range. If you are not feeling right, remind your doctor that you are not a number but a real, living, unique human being. You are not a number—yet!

LONG-TERM OUTCOMES OF CABG vs. PCI for LEFT-MAIN disease.

The last several months have witnessed publication of long-term follow-up of major trials for left main (LM) coronary artery disease revascularization. One of the trials that reported its long-term follow-up was the PRECOMBAT trial (Premier of Randomized Comparison of Bypass Surgery vs. Angioplasty Using Sirolimus-Eluting Stents in patients with left Main Coronary Artery Disease).

The PRECOMBAT trial was a prospective pen-able randomized trial that compared percutaneous coronary intervention (PCI) with coronary artery bypass grafting (CABG) in patients with Left Main coronary artery disease. The primary endpoint was a major adverse cardiac and cerebrovascular event (a composite of deaths from any cause). Patients considered eligible were older than 18 and had received a diagnosis of stable angina, unstable angina, silent ischemia, or non-ST-segment elevation MI. All had newly diagnosed LM stenosis and had been judged to be candidate for either PCI or CABG.

In conclusion the results from the long-term follow-up of the PRECOMBAT trial must be interpreted with caution. Patients who received PCI will have significantly higher risk from bad events. Its restricted external validity makes generalizability of its conclusion quite limited among the left main population. Because ischemia-driven revascularization was significantly higher with PCI, revascularization of patients with Left Main stenosis, particularly among those who are young or otherwise good surgical candidates should be carefully reviewed with a heart team approach.

(The above was discussed on MARCO Grand Rounds of the Air ((Sundays, 14.342 MHz, 11 a.m. Eastern time)) on both June 7th and 15, 2020.)

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ON THE FIRING LINE.....

Reprinted from Dr. Tony Dajer's fine article "The Learning Curve" which appeared in the July/August edition of Discovery magazine.

The red alerts flashed from Wahan to Lombardy to Seattle, yet the first COVID-19 cases in early March in New York City prompted an official reaction that suggested the virus had traveled by asteroid, not by human daisy chain. None of the patients in our E.R. had traveled to China or been around someone diagnosed with COVID-19. There was no clamor to broaden testing, no rush to rethink the model of contagion, no clarion to immediately shut down.

Reality hit in stages, like a plane lurching through air pockets.

First lurch: Coming onto a shift in mid-March, a colleague informed me, "Yesterday we had a middle-aged guy. Looked pretty good, decent oxygen saturation of 96%, then a few hours later, crumpled (rapidly declined). Crash intubation. Then another. The Italians warned us people look good, until they don't." Oxygen saturation—detected with a pulse oximeter on the finger—is the measure of oxygenated hemoglobin. The normal range is typically between 97 and 100%. The Italians discovered those oxygen levels can dictate life and death: COVID-19, unique among viruses, can slam it down to 70,60 or even 50%. A pulse ox level above 95%, though, was supposed to be good news.

Our first case, and now we can't even trust the initial pulse ox level?

Second lurch: My own first case. The ED tracker flashes: A patient in her 30s has a very rapid pulse. Chief complaint: fever and contact with a COVID patient. I hope someone else will pick her up. Someone not 63 years old and male with triple the risk of dying from this damn virus. Everyone else is tied up, though, so I click on the screen to sign myself up.

I shuffle to her isolation room. Mincingly, I don an N95 mask, cap, gown, gloves, surgical mask with face shield, and shoe covers. I slide back the glass door. She sits on the stretcher against the far wall.

"How do you feel?" "Achy, Some fever," she responds. "How's your breathing? The overhead monitor registers oxygen saturation at 95%. The danger zone starts below 90. "Not too bad," she answers, and my stomach unclenches. I ask her to face away, and then barely touch her with the stethoscope. Lung sounds will prove mostly useless in COVID patients: They tell you nothing the O2 saturation hasn't already. But I still need to test her for COVID. The swab up the nose can aerosolize the virus to spread on air currents, potentially infecting others. How do you ask a nurse to take a risk you won't? I come clean.

I'm 63 I tell Laura, trying not to sound pleading. "You?" "Forty," she answers. "Of course I'll get the swab."

Two liters of saline settle my patient's pulse. We admit her Better the next day, she is ~~speedily~~ discharged.

The tsunami hits that same week. Everyone has COVID. Amid the swarm, we cling to three guideposts: Follow the pulse ox. Avoid aerosolization. Intubate early and often.

The initial protocol was to keep the oxygen saturator above 90% with nasal oxygen. Per the Italians. If the patient needed more than 5 liters of oxygen per minute you incubated. We avoided techniques like high flow nasal oxygen and CPAP machines that deliver positive air pressured by mask because they aerosolize.

None of us put much faith in fad remedies like hydroxychloroquine. COVID is about lung mechanics, not magic bullets.

Third lurch: With each shift, you hear about colleagues around the city falling ill. We've all ramped up personal protection equipment to include N95s and goggles all the time, but this virus is devious. Male and is 63 is a bad thing to be.

I can't help it. Each NOTIFICATION that blares on the overhead PA trips a jackhammer in my chest. It heralds another critical patient and with the them a scramble to don extra preventives. My fear breaks cover like a panicked game bird. It helps that courage is all around.

The paramedics and EMTs pull the critical and the dying out of tiny apartments. They intubate, and pound on chests. It feels disrespectful to quickly stop CPR on the pulseless when they're brought in. But more resuscitation spews more virus. The critical patients who do make it to the ICU will be kept silent-intubated and sedated—and alone.

Nurses rival the medics. Doctors write orders and perform big-ticket procedures; it's the nurse who insert IVs, draw blood, adjust oxygen dials, changes soiled garments and turns patients incessantly. This is a nurses' disease. In total minutes at patient's bedsides, the difference between nurse and doctors isn't even close.

By week two, the guideposts have moved. We're starting to take the virus' measure. Follow the pulse ox: We now know there are "happy hypoxics" you can keep out of the hospital if you equip them with a home pulse oximeter; keep daily tabs on them with telemedicine and as needed arm them with portable oxygen machines. Avoid aerosolization: Actually, do what's best for the patient High-flow oxygen and CPAP machines keep some patients off ventilators. Build hoods and tents to contain the aerosolization. Intubate early: Combine high-flow oxygen with position change. You can bump them with lower O2 saturation just by rolling them onto their stomachs. Keep them turning. This evil thing will be with us for too long. We are soon seeing late complications as the virus pulls more tricks. We are getting smarter and doing things right but this must be our last pandemic.

LIGHTEN UP...



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Hubert Humphrey once said: "It is always a risk to speak to the press: They are likely to report what you say."

A sailor in the South Pacific wrecks his boat and wakes up on the beach and looks around. The sand looks bluish red—the trees bluish red—the sky bluish red. He thinks and says to himself, "I think I have been marooned?"

MY wife and I went to the Royal Farm Show and one of the first exhibits we stopped at was the breeding bulls. We went up to the first pen and there was a sign attached that said, "This bull mated 50 times last year." My wife playfully nudged me in the ribs...smiled and said, "He mated 50X last year, that's almost once a week." We walked to the second pen which had a sign attached, "This bull mated 35 times last year." My wife gave a healthy jab and said, "Wow, that's once a day...you could learn something from this one." I looked at her and said, "Go over and ask him if it was with the same cow."

All men think they are marrying nymphomaniacs. The problem is that after a few years the nympho leaves but the maniac doesn't.

A man applied for a job at Hooters. They gave him a brassiere and asked him to fill it out.

A Lexus mechanic was removing a cylinder head from the motor of an LS-460 when he spotted a well-known cardiologist in his shop. He shouted to the cardiologist to come over and said, "Hey Doc, want to take a look?" The cardiologist walked over and the mechanic wiped his hand and asked, "So Doc, look at this engine. I opened its heart, took the valves out, replaced anything damaged, and then put everything back in place, and when I finished it worked like new. So how is that I make \$48,000 a year and you make \$1.7 million when you and I are doing the same work? The cardiologist whispered to the mechanic. Try doing it with the engine running."

On their wedding night.....the young bride approached her new husband and asked for \$20 for their first lovemaking encounter. In his highly aroused state, her husband readily agreed. This scenario was repeated each time they made love for more than 30 years, with him thinking that it was a cute way for her to afford new clothes.

Arriving home one day, she was surprised to find her husband in a very drunken state. He explained that his employer was going through a process of corporate downsizing and he had been let go. It was unlikely that at the age of 59 he'd be able to find another position. Calmly his wife handed him a bank book which showed more than 3 years of steady deposits and interest totaling nearly \$1 million. Then she showed him certificates of deposits issued by the bank which were worth over 3 million, and informed him that they were one of the largest depositors in the bank.

Faced with evidence of cash and investments worth over \$3 million, her husband was so astounded he could barely speak, but finally he found his voice and blurted out, "If I'd had any idea what you were doing, I would have given you all my business?" That's when she shot him.

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NEWS FROM THE UKRAINE....Marco President Bernie Krasowski KD5QHV in El Paso, Texas, had an amp for sale in 2010 and one of the possible buyers was old-time MARCO member **Dr Alex Gavva** . (ur-411@bk.ru) UR4LL.

Alex wrote in 2010, "I joined Marco in the '90s, it was a Great Depression period in Ukraine. We had not money to buy drugs, and equipment for our hospital and in 1997 Marco organized \$40,000 humanitarian aid for us. Many different materials and equipment was delivered to our hospital from US...after 2000 life here improved, but I always remember this help. Please relay it to Linda (Bernie's wife KE5BQK) for relaying all Marco group Best regards,
Dr. Alexx Gavva

We have not heard since from Dr. Gavva.

HYPERINSULINISM

As presented on MARCO Grand Rounds, Sept. 4, 2022.

An insulinoma is a rare pancreatic b-cell tumor that hypersecretes insulin. The main symptom is fasting hypoglycemia. Diagnosis is by a 48-or-72 hr. fast with measurement of glucose and insulin levels, followed by endoscopic ultrasound. Treatment is surgery when possible. Drugs that block insulin secretion (Ca channel blockers, B-blockers, phenytoin) are used for patients not responding to surgery.

Of all insulinomas, 80% are single and may be curatively resected if identified. Only 10% of insulinomas are malignant. They occur in 1 in a quarter million people at a median age of 50, except in multiple endocrine neoplasia (MED) type 1 (about 10% of insulinomas), when it occurs in the 20s. Insulinomas associated with MEN type 1 are more likely to be multiple.

Symptoms & Signs: Serum glucose should be measured during symptoms. If hypoglycemia is present (glucose below 40), an insulin level should be measured on a simultaneous sample. Hyperinsulinemias of more than 6 suggests an insulin-mediated cause as does a serum insulin to serum glucose ratio more than .3.

Because many patients have no symptoms and hence no hypoglycemia at the time of evaluation, diagnosis requires admission to the hospital for a 48 or 72 hr. fast. Nearly all (98%) with insulinomas develop symptoms within 48 hrs. of fasting. 70% to 80% within 24 hrs. Hypoglycemia as the cause of the symptoms is established by **Whipple's triad:** (1) Symptoms occur during the fast; (2) symptoms occur in the presence of hypoglycemia; (3) ingestion of carbohydrates relieves the symptoms. Hormone levels are obtained as described when the patient is having symptoms.

Endoscopic ultrasound has a 90% sensitivity and helps localize the tumor. CT has not proven useful, and arteriography is unnecessary.

Overall surgical cure rates approach 90%. A small, single insulinoma at or near the surface of the pancreas can usually be nucleated surgically.

CLEVER...In the days of the Berlin Wall, there was a little old man who crossed the checkpoint every week, pushing his bicycle and carrying a heavy sack. The border guard, suspecting him of smuggling and always searched the sack thoroughly but never found anything worthwhile. One day, after the wall came down, the guard ran into the little old man.

"Look, I just know you were smuggling something all those years but I could never prove it," the guard said, "Tell me what it was."

The little old man chuckled, "Bicycles."

SKIPPING BREAST CANCER SURGERY

Surgery to remove the tumor is often considered crucial to fighting breast cancer. **But a small new study suggests an operation may not be necessary for all patients.**

Scientists enrolled 50 breast cancer patients over age 40 who had two types of breast cancer and early stage disease. All of the patients underwent chemotherapy and then had their tumors biopsied. Thirty-one—about 60% responded so well to the chemo that they were able to forgo surgery and follow-up with radiation alone. And all patients were still in remission after a follow-up periods of about two years.

The research adds to evidence supporting a new trend in cancer treatment toward descalation, at which care is individualized to minimize the interventions required. Because surgery can lead to medical complications and in some cases change the shape of the breast, avoiding unnecessary operations could result in better outcomes.

MEDISHARE UPDATE

Arnold Kalan, WB6OJB

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

The war in Europe opens a new wound that needs repairs, donate if you can.



BOB CURRIER MARCO GRAND ROUNDS OF

THE AIR. (Corrections to Marco)

14.342, Sundays, 11 am Eastern, One Hour Cat. II CME

CALL	HRS.	NAME	QTH
KD4GUA	39	Warren	Largo, FL
NU4DO	39	Norm	Largo, FL
KC9CS	38	Bill	Seminole, FL
N6DMV	38	Paul	Torrance, CA
WB6OJB	35	Arnold	Pac.Pal., CA
KE5QHV	34	Bernie	El Paso, TX
N4TSC	33	Jerry	Boca Raton, FL
KNOS	33	Dave	Virginia
N5RTF	32	Chip	New Orleans, LA
WB1FIJ	32	Barry	Syracuse, N.Y.
N5AN	31	Bud	Lafayette, LA
KD5BQK	31	Linda	El Paso, TX
K6JW	30	Jeff	Palos Verdes, CA
KM2L	29	Bruce	Clarence, N.Y.
N8CL	29	Chuck	The Villages, FL
KK1Y	29	Art	Seminole, FL
N9RIV	29	Bill	Danville, IL
KE8GA	28	George	N. Carolina
WA3QWA	26	Mark	Chesapeake, VA
NM2K	26	Dianne	Buffalo, N.Y.
WB9EDP	26	Harry	Batavia, IL
KE0PIE	25	Trina	Boulder, CO
N3IM	24	Keith	Millhouse, PA
N20JD	24	Mark	Sidney, Ohio
N6NYJ	24	Art	Beverly Hills, CA
W8ING	23	Bob	Hazard, KY
N4MKT	22	Larry	The Villages, FL
KD4IZ	21	Jack	Maryland
W4DAN	22	Danny	Cleveland, TN
KE5SZA	21	Bill	Danville, IL
KN2M	18	Dave	Buffalo, N.Y.
W1RDJ	16	Mark	Cape Cod, Mass.
W4EMB	15	Asef	N. Carolina
KC9ARN	14	Micheline	Batavia, N.Y.
W1EXE	14	Mark	Cape Cod, Mass.
AA4BX	14	Mary	Myrtle Beach, S.C.
KD4MD	13	Carol	U.S.A.
W6GZ	12	Bill	Hysteria, CA.
AA4FL	6	Jay	Hawthorne, FL.
K3IK	6	Ian	Pennsylvania
N9OC	5	Pat	Wisconsin
N9GJ	4	Greg	Tennessee

(ANY CORRECTIONS?)

(Above represent those audible at Base Station four or more times between January and

YEAR	TOTAL CHECK-INS	AVERAGE PER SUNDAY
1998	694	14.46
1999	766	15.95
2000	1,035	20.29
2001	1,153	22.60
2002	1,383	26.15
2003	1,489	28.63
2004	1,534	29.50
2005	1,517	29.17
2006	1,531 (one extra Sunday)	28.89
2007	1,591 (one extra Sunday)	30.02
2008	1,524 (Only 46 nets)	33.14
2009	1,533 (46 nets)	33.32
2010	1,591 (44 nets)	36.22
2011	1,514 (44 nets)	34.41
2012	1,602 (44 nets)	36.41
2013*	1,400 (44 nets) (New Freq)	31.82
2014 (Year of Terrorist)	1,756 (47 nets)	37.36
2015	1,722 (49 nets)	35.14
2016	1,687 (46 nets)	36.67
2017	1,536 (46 nets)	34.13
2018	1,500 (43 nets)	34.88
2019	503 (14 nets)	35.90
2022	577 (16 NETS)	36.06

Record number of stations checked-in was 51, on Feb. 24, 2013

TARDIVE DYSKINESIA

(As presented on Marco Grand Rounds, July 24, 2022)

Tardive dyskinesia (TD) is a disorder that involves involuntary movements. Tardive means delayed and dyskinesia means abnormal movement.

TD is a serious side effect that occurs when you take medicines called *neuroleptics*. These drugs are also called antipsychotics or major tranquilizers. They are used to treat mental problems.

TD often occurs when you take the drug for many months or years. In some cases, it occurs after you take them for as little as 6 weeks.

Medicines that most commonly cause this disorder are older antipsychotics, including: *Chlorpromazine, Fluphenazine, Haloperidol, Perphenazine, Prochlorperazine, Thioridazine, Trifluoperazine*.

Newer antipsychotics seem less likely to cause TD, but they are not entirely without risk. Other drugs that can cause TD include: *Metoclopramide (treats stomach problems called gastroparesis)*. Antidepressant meds such as *amitriptyline, fluoxetine, phenelzine, sertraline, trazodone*. Anti-Parkinson meds such as *levodopa*. Antiseizure meds such as phenobarbital and phenytoin.

Symptoms: Include uncontrollable movements of the face and body such as: *Facial grimacing (commonly involving lower facial muscles), Finger movement (piano playing movements), Rocking or thrusting of the pelvis (duck-like gait), Jaw swinging, Repetitive chewing, Rapid eye blinking, Tongue thrusting and restlessness*.

Treatment: When TD is diagnosed, the doctor will either have you stop the meds slowly or switch to another one. If TD is mild or moderate, various medicines may be tried. A dopamine-depleting med tetra- benazine is most effective treatment for TD. If TD is very severe, a procedure called deep brain stimulation DBS, may be tried. DBS uses a device called a neurostimulator to deliver electrical signals to the areas of the brain that controls movement.

Prognosis: If diagnosed early, TD may be reversed by stopping the medicine that caused the symptoms. Even if the med is stopped, the involuntary movements may become permanent, and in some cases, may become worse.

Medications and supplements used to treat Tardive Dyskinesia: Cholinergic agents such as Donepezil. Clozapine is the best current med recommended for patients who require antipsychotics and simultaneously have TD, as clozapine has been reported to reverse TD symptoms. Apomorphine, a dopamine receptor antagonist, can be give in conjunction with l-DOPA to decrease dyskinesias.. Tetra- benazine, decrease the severity of TD. Other drugs used to quiet TD are Prpranolol, Amantadine, Clnazepam, Ginkgo biloba...

While no FDA-approved treatment for TD is available, several meds options are available to ameliorate its effects.

TRIGEMINAL NEURALGIA

Trigeminal neuralgia (TN) is a condition that causes painful sensations similar to an electric shock on one side of the face. This chronic pain condition affects the trigeminal nerve, which carries sensation from your face to your brain. If you have trigeminal neuralgia, even mild stimulation of your face—such as from brushing your teeth or putting on makeup may trigger a jolt of excruciating pain.

You may initially experience short, mild attacks. But trigeminal neuralgia can progress and cause longer, more frequent bouts of searing pain. Trigeminal neuralgia affects women more often than men, and it's more likely to occur in people who are older than 50.

Because of the variety of treatment options, having trigeminal neuralgia doesn't necessarily mean that you're doomed to a life of pain. Doctors usually can effectively manage it with medications, injections or surgery.

Symptoms: Episodes of severe, shooting or jabbing pain that may feel like an electric shock. Spontaneous attacks of pain or attacks triggered by things such as touching the face, chewing, speaking or brushing teeth. Attacks of pain lasting from a few seconds to several minutes. Pain that occurs with facial spasms. Bouts of multiple attacks lasting days, weeks, months, or longer—some have periods when they experience no pain. Pain in areas supplied by the trigeminal nerve, in-



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cluding the cheek, jaw, teeth, gums, lips, or less often the eye and forehead. Pain affecting one side of the face at a time. Pain focused in one spot or spread in a wider pattern.

Causes: In TN, also called *tic douloureux*, the trigeminal nerve's function is disrupted. Usually the problem is contact between a normal blood vessel—in this case, an artery or a vein—and the trigeminal nerve at the base of your brain. This contact puts pressure on the nerve and causes it to malfunction. While compression by a blood vessel is one of the more common causes, there are many other potential causes as well. Some may be related to multiple sclerosis or a similar disorder that damages the myelin sheath protecting certain nerves. Trigeminal neuralgia can also be caused by a tumor compressing the trigeminal nerve.

ALZHEIMER DRUG FAILS TEST.

"The **Paisa mutation**, nicknamed for the people of NW Columbia in whom it is found, is associated with sticky clumps of protein in the brain called amyloid-B plaques, one of the hallmarks of Alzheimer disease.

Individuals who inherit a copy of the Paisa mutation from one of their parents & develop mild cognitive impairment by 44 years on average, and Alzheimer disease 5 years after that. Typically they die within a few years after their 59th birthday.

Researchers have identified about 1200 members of an extended family of 6000 people, most of them living in Medellin, Colombia, who carry the Paisa mutation, the most common cause of familial early onset Alzheimer disease. This area is an enormously powerful place to test the hypothesis.

The hypothesis has come to be known as the "*amyloid cascade hypothesizes*," an idea born 30 years ago when 2 UK scientists proposed that amyloid-B deposition in the brain—first described by German Alois Alzheimer in 1906. According to the hypothesis reducing amyloid B plaque in the brain should prevent or slow the progression of Alzheimer disease, and that has led to clinical trials of one anti-amyloid therapy after another in the search for an effective treatment.

Whether amyloid-B deposits cause Alzheimer disease still isn't clear. Although higher levels of plaques—detected via positron emission tomography (PET) scans or cerebrospinal fluid or on autopsy—are associated with more advanced Alzheimer disease, some people with amyloid plaques in the brain never experience cognitive impairment.

After a decade of the first-ever Alzheimer prevention trial, what would test an anti-amyloid monoclonal antibody called *crenezumab* in members of the Colombian extended family. The trial enrolled 252 people between the ages of 30 and 60 who had no Alzheimer symptoms at baseline.

However, a decade after the trial was announced, in June of this year, the trial collaborators issued press releases announcing disappointing news compared with placebo, *crenezumab did not demonstrate a statistically significant clinical benefit in people with the Paisa mutation after 5 to 8 years of treatment*.

(Information for above reported by Rita Rubin which appeared in the Sept. 13 edition of JAMA.) and presented on MARCO Grand Rounds of the Air on Sept. 18, 2022.)

When women are ovulating they unconsciously buy and wear sexier clothing *Science Daily reports*.

THE WRIST BUMP TO REPLACE HANDSHAKES—Aether, 2014 edition...Infections transmitted in health facilities kill at least 80,000 Americans each year. One common culprit is the germ-spreading handshake. A less spreading fist bump might make a safer greeting between doctors and patients. "We found that the handshake transferred 10 to 120 times more bacteria than a fist bump," said a biochemical lecturer at Aberystwyth University in Wales! (This goes along with the tieless physician carrying a disposable stethoscope in a dirtless white coat!) *Popular Science, Dec. 1914*.

How a virus seemingly returned from the dead...Single polio case in New York may be very, very tip of the iceberg. CDC official says. Meanwhile the first case later appeared in London, England.

New York City has detected poliovirus in sewage. This comes as no surprise since a case of paralytic was confirmed in a resident in Rockland County—just on the outskirts of the city.

Polio inoculations consists of 4 doses, at 2 months, 4 months, 6 months and 6 years of age. Does polio vaccination with its 3 sero-types, wear out? (*Type 1 is most common & causes the most paralysis.*) It wains but continues throughout life as no cases in vaccination patients seem to occur.

Approximately 93% of the U.S. population has been vaccinated. Oral vaccine continues throughout the world but has been totally abandoned since 2000, in favor of the injectable vaccine in the USA.

This present scenario is a serious situation as it was supposedly totally eliminated in the US in 1979...polio is entirely preventable and its reappearance should be a call to action for all of us.

The worst recorded polio epidemic in the US occurred in 1952, when 58,000 cases were reported. More than 21,000 people were left with mild to disabling paralysis and over 3,000 died.

Polio is a highly contagious virus that spreads through person-to-person contact (*most commonly through not washing one's hands after stool*) with infected people. Most of these experience no symptoms while about one in 100 develop more serious symptoms including paresthesia's, meningitis and paralysis. Among those paralyzed, 5%-10% die when the virus affects their breathing muscles. Deformed limbs means many infected will later require leg braces, crutches, wheelchairs, and some need to use breathing devices, like the iron lung, an artificial respirator invented for treatment of polio victims. To add insult to injury, some children go on to develop post-polio syndrome decades later, which can include muscle weakness, joint pain and feelings of mental and physical fatigue.

But then came the polio vaccine, which provided high levels of protection and through our collective herd immunity, we have been able to fend off the virus.

Wild poliovirus, however, still remains endemic in Pakistan and Afghanistan. Though polio cases have decreased worldwide by nearly 99%, the virus remains at large in those two countries and the threat of imported cases of polio continue to exist.

The virus enters the mouth via the fecal-oral route, multiplies in lymphoid tissues resulting in primary viremia and later, secondary viremia, culminating in development of antibodies and development of symptoms. Virus is present in the throat and feces during incubation and, after

These latest polio incidents are not one-off events. Immunization coverage is dropping worldwide, and the immunity wall generations past have built is slowly being chipped away. The vaccine distrust that unwarrentedly grew out of the Covina-19 pandemic is only driving more people to opt out of vaccinations or under vaccinate themselves and their children. Others may have paused or delayed vaccination programs due to disruption caused by the pandemic. The latest report by the World Health Organization shows global immunization coverage—including the polio vaccine along with numerous others like measles and rubella—dropped from 86% in 2019 to 81% in 2121.

Treatment: There is no cure for paralytic polio and no specific treatment. Physical or occupational therapy can help with arm or leg weakness caused by polio and might improve long term outcomes, especially if implemented early in the course of illness.

Diagnosis: Negative history of vaccination, physical exam, cultures of throat, stool and spinal fluid. MRI scan of the brain

Transmission: Polio is very contagious and spreads through person-to-person contact. It lives in an infected person's throat and intestines. It can contaminate food and water in unsanitary conditions. It can be present on a carrier's toys or unclean eating utensils.

Poliovirus is most likely to be detected in stool specimens.

Prevention: There are two types of vaccine that can prevent polio: Inactivated poliovirus vaccine (IPV) given as an injection in the leg or arm. Only IPV has been used in the U.S. since 2000. Oral poliovirus vaccine (OPV) is still used throughout much of the world.

It is important to practice good hand hygiene and wash hands often with soap and water. Note that alcohol-based hand sanitizers do not kill the poliovirus.

Yellow Fever outbreak (1793)...5,000 deaths in Philadelphia out of a population of 28,500.

Typhoid Fever outbreak (1906-1907)...10,771 deaths, mostly in New York.

Spanish Flu pandemic (1918-1920)...675,000 deaths out of a U.S. population of 103 million. (50 million deaths worldwide.)

Diphtheria outbreak (1921-1925)...206,000 Americans stricken, 15,520 deaths.

Polio epidemic (1916-1955)...57,628 Americans stricken; 3,145 deaths.

Asian Flu pandemic (1957-1958)...116,000 American deaths out of a population of 171 million.

H3N2 pandemic (1968)...100,000 American deaths out of a population of 200 million.

H1N1 Swine flu pandemic (2009-2010)...Up to 18,306 American deaths out of a population of 306 million.

2018-2019 Influenza-A season...Up to 52,664 American deaths out of a population of 326 million.

2019-2-020 Influenza-A season (Oct. 2019-March 2020)...55 millions stricken out of a population of 328 million.)

COVID-19 pandemic (Dec. 2019-present).. Over one million American deaths through May 15, 2022 out of a population of around 328.2 million.

CUT TV TO HELP YOUR HEART

Scientists have found an easy way to reduce risk of coronary heart disease—stop watching TV. The researchers looked at data from 373,000 British people between ages 40 and 69. Around 9,000 of them developed coronary heart disease.

The researchers found that those who watched an hour of TV or less a day had a 16% lower risk of developing a heart problem than those watching four or more hours. For those watching 2-3 hours, the risk was 6% lower. Interestingly, no similar link was found for leisure time computer use. That may be because TV watchers tend to stay on the sofa and snack.

WORLD LANGUAGES

Being a Ham entitles us to talk to stations all over the world. But what if they can't speak English? What second language should Hams go for?

According to the National Geographic Magazine, the ten most dominant languages in the world are Chinese (1,213—in millions). This is followed by Spanish (329—in millions), English (328), Arabic (221), Hindi (182), Bengali (181), Portuguese (178), Russian (144), Japanese (122), German (90).

Nearly half of the world speaks a top-ten language. The smallest 3,524 languages, spoken by fewer than 10,000 people each, are used by just .1% of the world's population. There are now 254 extinct languages just since 1950 and a grand total of 2724 languages still being spoken.

Language follows power. In an increasingly globalized and homogenized era, languages that dominate world communication and commerce jump geopolitical borders and geographical boundaries, pushing smaller languages towards extinction.

Since WW II, English used in communication, has leaped forward so that many in foreign counties are now learning English, whereas in the past it had been Latin and then French as the language of the courts.

Gout Alert: Gout is a condition that affects 4% of American adults. It is a painful type of inflammatory arthritis characterized by excessive amounts of uric acid in the blood which can cause sudden gout flares (attacks) due to needle-like deposits of uric-acid crystals in the joints causing redness, swelling and pain.

Two main uric-acid lowering medications are available. The first is allopurinol (LOPURIN, ZYLOPRIM), which has been the first-line medication for preventing gout attacks since the FDA approved it in 1966. Allopurinol is particularly effective in reducing uric acid in patients with kidney disease. The second is febuxostat (ULORIC), which the FDA approved in 2009 and is almost 20 times more expensive than allopurinol.

Public Citizen's Health Research Group has long recommended the use of allopurinol for most patients with gout and designated febuxostat as a **Do Not Use drug**.

The present designation is based on recent evidence from the clinical trials that supported its approval, which showed that even though the drug lowered blood uric acid levels more than allopurinol it was not more effective than allopurinol in preventing gout attacks, which is the main goal of treatment. Additionally, there was early troubling evidence suggesting that febuxostat increased the risk of serious CV adverse effects and related mortality.

In Feb. 2019, the FDA mandated the addition of a black-box warning, the agency's most prominent warning, to febuxostat's labeling indicating that patients with established CV disease who were treated with the drug had an increased risk of death compared with similar patients treated with allopurinol.

Acute gout attacks are characterized by a rapid onset of pain, usually while one is asleep in the small joint at the base of the **big toe** (*it is the most active joint in the body!*) In some people, the acute pain is so intense that even a bed sheet touching the toe causes severe pain. These painful attacks usually subside in hours to days, with or without medication. In rare instances, an attack can last for 3 weeks.

The prevalence of gout in the U.S. has risen over the last twenty years and now affects 8.3 million Americans. Gout is more common in men than in women and more prevalent in African-American men than white men. The chances of having gout rises with age, with a peak age of 75. In women, gout attacks usually occur after menopause. Among the U.S. population, about 21% have elevated blood uric acid levels, a condition known as hyperuricemia. However, only a small portion of those with hyperuricemia will actually develop gout. If your parents have gout, then you have a 20% chance of developing it.

Risk factors for Gout...Obesity, excessive weight gain, especially in youth, moderate to heavy alcohol intake, high blood pressure, diabetes and abnormal kidney function are among the risk factors for developing gout. Certain drugs and diseases can also cause elevated levels of uric acid. Also, there is an increased prevalence of abnormally low thyroid hormone levels in patients with gout.

Diagnosis...The finding of uric acid crystals in the joint fluid of the big toe, the ankle, the knee, the shoulder. High blood uric acid levels and history of dehydration and excessive alcohol intake.

Drug Treatment...To reduce inflammation & pain: Non steroidal such as Advil, Motrin, Aleve, Indocin, Celecoxib, Celebrex, colchicine, & Steroids. To prevent gout attack: Zyloprim, Lloric, & rarely Febuxostat (*potentially dangerous!*). To improve kidney washout of uric acid: Probenecid. **Other therapies:** Avoid excess red meat, liver, Purine-rich seafoods (*anchovies, sardines, mussels, scallops, trout and tuna.*) Avoid alcoholic beverages & dehydration. Avoid the following meds: thiazide diuretics, angiotensin converting enzymes (ACE) and beta blockers. Also, anti-rejection drugs in those who have undergone an organ transplant. Recent accidents or surgical procedures can precipitate an attack.

20% of gout victims develop uric acid or calcium oxylate kidney stones. 30% of gout attacks have normal uric acid levels. Long-standing accumulation of uric acid crystal will build up lumps called "*tophi*" which are reversible.

The red nose on comedian W. C. Fields was not directly caused by gout but by building up alcohol dilated nasal blood vessels (*cirrhosis of the nose?*)—but it did have some resemblance to the larger big toe of gout.

DOES IT PAY TO BE TALL & GOOD LOOKING?

Yes...Good-looking people and tall people get a "beauty premium"—an extra 5% an hour—while there is a "plainness penalty" of 9%. It was found that tall men get on average an annual pay raise of \$789/ per inch above average height.

Some look for unattractive aides so they won't get tempted nor to irritate their wives...in New York a 33-year-old single mother, filed suit against Citigroup, claiming she was fired for looking too sexy. Her name—Debralee Lorenzana (not Mable!)

Another fired debutante claimed she couldn't help she was voracious—it was unfair to be let go because it was in her genes and out of her control.

This boils down to: **Would you hire a beautiful young woman or a handsome young man to be your associate?** If beauty is an asset—then, why are there so many disproportionate adults in today's world?

"Many people prefer cats to other people, and many cats prefer people to other cats."

THE FIRST ANESTHETIC

In the early 19th century, before general or local anesthetics came into use, surgeons were said to need the "*heart of a lion and the hand of a lady*"—the first to steel themselves against the cries of struggling patients, the second to work with speed and dexterity so as not to prolong the ordeal. A skillful surgeon could then perform an amputation in less than three minutes.

Nitrous oxide was first prepared in 1772 by the English scientist

Joseph Priestley, better known for his discovery of oxygen. As early as 1800, Humphrey Davy, inventor of the miners' safety lamp, suggested the gas might be used to relieve the pain of surgery. But its potential as an anesthetic was ignored because of its more obvious property—that of inducing hilarious laughter when inhaled. Laughing gas became a popular after dinner entertainment and a feature of exhibitions given by traveling showmen. There was hardly any serious research into Davy's suggestion until a young Boston dentist, Horace Wells, recognized the anesthetic properties of nitrous oxide in 1844. At a public exhibition of the effects of the gas, he noticed that one of its recipients had fallen and seriously gashed a leg without showing any evident of pain.

After trying out nitrous oxide in his dental practice, Wells sought to gain wider attention by giving a demonstration of extraction under the influence of the gas at Harvard Medical School. But things did not go according to plan. The subject of the operation cried out in pain, the students hissed and booed, and Wells was denounced as a fraud.

In 1846, another Boston dentist, William Morton, performed a painless extraction at Harvard, using a liquid based anesthetic, **ether**, and the following year a British obstetrician, James Young Simpson, started to put patients under with **chloroform vapor**. It seemed that nitrous oxide would be consigned to oblivion, except as a chemical party trick.

In 1853 Queen Victoria was given chloroform during the delivery of her eighth child. But in time, ether and chloroform were both found to be too risky, and it is nitrous oxide that is the safest and most widely used anesthetic inhalant today.

WOW!



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