

INTRO - Telephone game - communication – SUNDAY 13 maj 2018

I am awkward. The presentation “**Fascia: where it lives and what lives in it.**” is on Pages. The Impress Software and Power Point is for someone else to use in their presentation.

The original meaning of the word awkward comes from Old Norse. It is not backwards as many may think, but the original meaning actually, “facing a different direction” on a saddle or a horse (Tell Me Something I Don’t Know Podcast, <http://tmsidk.com>).

In the inspiration of TED Talks, a complex idea worth sharing can be delivered in 4 minutes up to 26 minutes. I like TED Talks; therefore, you will see something similar today. A lot of information packed into 38 minutes!

I have put this presentation in such a way, so you may view in its entirety at a later date. Links, pictures, text - everything. This way you can sit back and enjoy the moment we have together. Be salient. :)

Thank you for being here.

Allissa from Iowa, Living in Sweden

<http://uggleboterapi.se> - click on BLOG

Beautiful definition of Fascia - Signore Paolo Tozzi

A Unifying Neuro-Fasciogenic Model of Somatic Dysfunction-
Underlying Mechanisms and Treatment - PART I

Paolo Tozzi, MSc Ost, DO, PT School of Osteopathy C.R.O.M.O.N. – Rome – Italy

The fascia plays different physiological and functional roles related to joint stability, general movement coordination, proprioception, nociception (Tozzi, 2012), transmission of mechanical forces (Huijing, 2009); and is associated with wound healing, tissue repair and many connective tissue pathologies such as Dupuytren contracture and the effects of post-operative adhesions (Gabbiani, 2003).

By investing each tissue at multiple hierarchical levels, the fascia embodies the element of structural interconnectedness around, within and between body constituents, whilst allowing simultaneous sliding and gliding motions.

Part I - page 4 - **A unifying model that re-interprets dysfunctional processes and manual therapeutic effects by integrating neurological influences in a multidimensional perspective is needed, and this paper suggests that a neurofasciogenic model meets that need.**

The time has come to meet **a unifying model in a multidimensional perspective**, thank you — Signore Paolo Tozzi - thank you very kindly! Wonderful paper to read, by the way! :)

This lecture coincides with Robert Schleip’s lecture: “Fascia and Interoception”. His lecture is video taped and can be purchased from www.WholeBeingFilms.com. It is important to cover Interoception when discussing Fascia as they go hand in hand. For more information on the Interoception discussion go to BLOG 16 and 17 and 17a or see Dr. Schleip’s video / books.

Now, I will introduce you to Kelly Mahler, Dr. Emily Splichal, Dr. Bud Craig and Matt Sanford.

(<http://bfs.uggleboterapi.se/#post16>)

BLOG 16 - "Interoception - 8th Sense Over Load"

Kelly Mahler, MS OTR/L - <https://www.mahlerautism.com/interoception>

A.D. (Bud) Craig wrote the foreword to Kelly Mahler’s book, “Interoception: the Eighth Sensory System”. As discussed in the book, our seven systems are not working alone. We have graduated

from the five basic senses: smell, sight, sound, touch and taste. We have added the "hidden senses" of the vestibular and proprioceptive systems.

Ms. Mahler is an occupational therapist and autism consultant specializing in the development of self-regulation and social cognition skills. She cites the sources of *Craig*, 2002 and *Fuchs & Koch*, 2014 for the best description of Interoception, page 1 states:

".helps us feel many important sensations, such as pain, body temperature, itch, sexual arousal, hunger, thirst, heart rate, breathing rates, muscle tension, pleasant touch, sleepiness and when we need to use the bathroom. Interoception helps us sense a variety of general *and* localized feelings, such as feelings of warmth or coldness, tickling or shivering, tension or relaxation, constriction or expansion, sinking or lifting, trembling or steadiness."

Blog #17 - 29 april 2018 "Interoception - Forskning i Framkant " **(<http://bfs.uggleboterapi.se/#post17>)**

Dr. Emily Splichal was kind enough to send me her Webinar 1 of 3 for my research purposes. To find more about her and her work "[Intro to Interoception](#)", see www.ebfafitness.com.

Interoception The Emotional Side of Fascia with Dr Emily Splichal

<https://www.youtube.com/watch?v=D09NMBHONLU&t=218s>

EBFAFitness - Published on Jul 6, 2017

"How Do you Feel?" with Dr. Bud Craig - Functional Neuroanatomist

[July 28, 2015](#)

<http://brainsciencepodcast.com/bsp/121-craig>

Ginger Campbell MD produces the [Brain Science Podcast](#), exploring how recent scientific discoveries are unraveling age-old mysteries, such as intelligence, emotions, personality, and memory. An interview with A.D. (Bud) Craig about his BOOK: *How Do You Feel?: An Interoceptive Moment with Your Neurobiological Self*

Dr. Bud Craig said:

@ 05:00 - And that pathway turned out to be a brand new pathway, that's only present in **primates**, that leads to a portion of the brain that is involved in calculating the energy utilization across every sensory and motor aspect of our lives.

@07:26 - "All the textbooks still say that the other feelings from the body—like pinprick, or warmth or cool sensations from the skin, or even cramps from inside our viscera—that these are all part of the same **somatosensory system**. That didn't quite fit together in my mind; there were a lot of discrepancies and conflicts that didn't jive."

So, I was interested already in identifying how the feelings from the body that we feel emotional about like pain—are different from touch, muscle sense, balance, and so on. And it turns out that led me to identify this new pathway that nobody had really even imagined. This pathway represents all of the tissues of our body, including bone, sclera, skin, muscle, and viscera.

And it tells the nervous system what the condition of the tissues is, so that the nervous system can take care of the body. That's the process called **homeostasis** that uses the **autonomic nervous system**, primarily, as its effector in the body.

@12:30-15:54 - We are learning in the middle of 1990s high resolution new technologies enabled us to see interoception pathways. Fibers are so small.

@16:00 - Skin is an organ - Dr. Bud Craig- "Scientists did not think the skin was an organ of the body, which it is." We all know now about this now - and we take it for granted - but it was thru many individuals trial and error.

SALIENCY - USING ALL THE SENSES

Bud Craig talks of saliency, where time slows down in order to take in the present NOW moment. Dr. Rangan Chatterjee describes his heightened awareness when he dealt with his 6 month old son convulsing. Time slows down and every sense comes to the front door. Awareness and attention is critical for the body to make predications. All the algorithms converge to give importance.

Broken Brain Podcast - Episode 1: Interview with Dr Rangan Chatterjee.
<https://soundcloud.com/user-196767676/broken-brain-podcast-episode-1>
@14:30 minutes - story of 6 month old convulsing.

Matt Sanford was feeling **saliency** pre and post of a traumatic car accident. ALL SENSES in his body were working together to try to make sense of the brutality of the moment.

All entrainment is a predication a guess based on learning information thru the years from the world around us. Connections happen in milliseconds, per the words of Dr. Lisa Feldman Barrett who will later teach us about neural entrainment.

Before we go there, listen to all or part (00:00-02:22) of Matt Sanford's story. His sense of TOUCH was brutality taken away; therefore, the others rushed to the front door to try and make sense of the new world around him.

Sense of HEARING - Matt Sanford 00:00 to 02:22

American Academy of Osteopathy (AAO) CONVOCATION 2014 w. Dr. Richard Schuster - MP3 clip
@45:00 fMRI demonstrates what Matt was saying all the years prior, his brain and body were connected.

Audio failed to attach - see uggleboterapi.se click button: "Matt Sanford Audio"

Matt lives in Minnesota the state bordering North of Iowa; Iowa is where I grew up. There is a lot of strong and tough heritage there. Matthew is an amazing example!

Matthew's Vision - <http://www.matthewsanford.com>

For me, everything I do flows from my daily yoga practice – the time I take to feel and refine the sensation of my existence. When I lose track of why I do what I do, I remember a simple observation from my years of practicing and teaching yoga. I have never seen anyone truly become more aware of his or her body without also becoming more compassionate.

On the flipside, when we become more disconnected from our bodies, we become more self-destructive. Each day, as I practice connecting my mind and my body, I am able to feel a more compassionate path. I wish the same for you.

Matthew Sanford -- Transform 2009 - Mind Body Awareness

<https://www.youtube.com/watch?v=-mw4WoDc8RU>

Mayo Clinic - Published on Feb 28, 2013

Matthew Sanford, the founder of Mind Body Solutions, speaks about the connection between the mind and body at Transform 2009, a symposium sponsored by the Mayo Clinic Center for Innovation.

@ 08:40 "Trauma disconnects the mind from the body."

@ 09:20 "I'm being told that I've severed my spinal cord and that's the devastating injury at T 4,5,6. And I am being told I have no sensation in my whole body; in my body below my point of injury. That basically that mind-body relation from my point of injuries is over. And I - I'm a 13 year old boy and

I'm sitting there thinking I don't know if that's true. I feel something I feel it's a tingling or a hum. And you know, it's not like other sensations, but it's real. I have it. So I tell the doctors about it."

@ 10:59 "They [neurology residents] poke me in my arm and then they poked me in my foot. And say, "does it feel the same?" And I'm getting ashamed now and humiliated for thinking and I could have sensation with a severed spinal cord. And I say, "No." And they say, "See they are not real."

Sense of TOUCH

is an important aspect to ENTRAINMENT AND INTEROCEPTION. Matt Sanford felt the act of INTERCEPTION from within his 13 year old body. The spinal cord may have been severed at T4,5,6, so he lost motor movement and muscle control. HE lost TOUCH sensation there. BUT he could FEEL with all his OTHER 7 SENSES. **Loose one sense — another sense becomes more active and stronger.** This helps us to make predications. See Dr. Lisa Feldman Barrett's work.

When the body sustains TRAUMA:

***Senses come to attention in the MOMENT to remember details.
Time slows down. Dr. Bud Craig talks of saliency.***

Modern medicine misunderstood. It thought Matt Sanford was feeling electrical stimulation from nerve. Similar to the bioluminescence of the Sea Pen which we will see later, some nerves were severed but the brain was receiving information from the body. How? Years later an fMRI proved Matt's brain's cortex felt the ankles, despite a severed spine (listen to "Matt Sanford Audio" on separate link @45:00 for Matt's explanation on his fMRI). HOW did this happen?

*Perhaps HAD someone told Matthew about INTEROCEPTION or FASCIA,
he may not have felt so ashamed.*

***It is our job to educate others about Interoception and Fascia.
We must bridge the professions.***

MOMENTUM

MOTION, MOMENTUM, MOVEMENT IS AN OSCILLATION

The Spinal Cord bathes in Cerebrospinal Fluid (CSF). The spinal cord is a structure which loops information. What about the fluid bathing the brain and spinal cord? Is it similar to the fluid around the Gut-Brain Axis? How is the CSF the same or different than the matrix fluid bathing the Fascia?

Nervous System does not just flow up and down the spinal cord, it flows out into the periphery with MOMENTUM. Schwann Cells are nomadic glial cells who originated in the brain. Schwann Cells use blood vessel to climb and navigate around; they fix things that are broken on the inside of the body. Schwann cells live on substrates within the periphery. They also need a fluid in which to move, otherwise, movement ceases.

The ECM or Ground Substance where Fascia lives needs a closer look. Science is obsessed with structure. It is easy to study.

What about the fluid flow? Fluid needs a structures to flow through, around, on. It must have the structure just like a river needs the earth to channel or tunnel flow in. The same is true for the Non-Newtonian Fluid of our body.

Newtonian Fluids change based on temperature. But a Non-Newtonian fluid like corn flour or honey or ketchup changes on pressure or vibration something called SHEAR FORCE. Non-Newtonian fluids have multiple viscosities.

Multiple viscosities is a trait of NON Newtonian Fluids. Fascia's ground substance can change viscosity with shear force. Let us look at what vibration can do to a Non Newtonian Fluid of corn starch on the British Quiz Show, IQ with Stephen Fry.

QI Series I

Episode 13: Intelligence

QI - Series I - Non Newtonian Fluid

2:27 minutes - Published on Dec 3, 2011

<https://www.youtube.com/watch?v=ClqRFpQuaZ8>

Fascia is also a structure *in which all our little critters inside of us* use to navigate. Just like a Schwann cell uses a blood vessel to navigate **or** how the Glymphatic System cleanses the brain during sleep, seen on two-photon microscopy. To read the amazing work of R. Douglas Fields on Schwann Cells or the work of Maiken Nedergaard's team from the University of Rochester Medical Center on the Glymphatic System, feel free to go into these rabbit holes at my BLOG.

<http://bfs.ugglebaterapi.se/#category0>

(Blog #18c - torsdag den 3 maj 2018 - "Pioneers Find Keys")

(Blog #18d - fredag den 4 maj 2018 - "Keys in the Brain")

(Blog #18e - lördag den 5 maj 2018 - "Objection! No Rule Change")

Fascia lives within almost everything in our body. I see its properties to be that of a NON NEWTONIAN FLUID as well. When a shear force (compression and twist) is exerted on a Non Newtonian Fluid, it changes its viscosity from a gel to a fluid. A Non-Newtonian fluid uniquely has multiple viscosities.

The discussion of which I listened to on the Podcast, **Stuff You Should Know** - "How Ketchup Works".

How Ketchup Works JUNE 22, 2017 - @24:32-26:45

<https://www.stuffyoushouldknow.com/podcasts/ketchup.htm>

@25:17 Ketchup needs a shear force to change its viscosity. Shear force is a pressure.

@25:34 "Decreasing the Viscosity, Increases the FLOW rate and ketchup comes out of the bottle faster."

@25:57 Concussive force

<http://bfs.ugglebaterapi.se/#post19>

Blog #18 - måndag den 30 april 2018 "Folds of Fascia to Non-Newtonian Fluid"

See Christopher Daprato and colleague Kenneth Leung give an excellent lecture at the OSHER Center Mini Medical School for the public May 9, 2017. The Fascia glides and slides over other connective tissues. A liquid "*barrier*" is in between them. @10:00 - Honey is used in an example of papers gliding or sticking on each other. Honey is a Non-Newtonian Fluid. @29:00 ketchup.

Fascia is within the levels of FAT. The BEEF FAT videoed below is not ALIVE. As soon as the cow was slaughtered, its fluid flow ceased. The essence, the life force left the cow, and all that remained was a vessel. Like an abandoned house, no family living inside, no life force of the house. Without the proper pressure driving fluid, no fluid flows through. One can hear the dehydration of the fascia as it snaps.

Let us hydrate this substance again. Not making the FAT rise from the dead, but reviving it's fluid flow. Something quite unique about the BEEF FAT. It is a Non-Newtonian Fluid. It has multiple viscosities.

BEEF FAT VIDEOS 1-5

Explanation of why I have BEEF Fat rendering videos - here.





© Can Stock Photo - csp38228493

Bumps, Bends, Folds - increase surface area in small area. This increases sensation/perception. Momentum increases with bends like Waterslides, Swedish roundabouts, Walking up hill then down.

A Shovelhjul or Paddle Wheel like that of a Steam Engine maintains an oscillation or momentum.

LEVELS - FOLDS - BENDS

Provide traits such as protection and momentum and increased sensation. Fingers and toes after bath wrinkle to give higher sensation. Levels or folds provide protection like layers of an onion, one area bruised another can still thrive. Or the protection of a calcified or crystalized biofilm of a like that of a lithopedion or stone child.

MOMENTUM

Amar Bharati who has sacrificed his right arm in devotion to the Hindu deity **Shiva**. He reached his arm straight up into the air above his head in 1973. At first there was a lot of pain, then pain subsided, but the range of motion stiffened. Now his arm remains in this position without effort. If suppleness should return, these tissues would need some divine intervention. **Fluid has a difficult time flowing up without momentum - pressure system impeded.**

*MOTION, MOMENTUM,
MOVEMENT IS AN OSCILLATION*

*See: 5 metronomes
Physical Entrainment*

*Odd: We have 5 senses, and Uri Hasson uses
5 metronomes, coincidence?*



Physical Entrainment: 5 metronomes

https://www.ted.com/talks/uri_hasson_this_is_your_brain_on_communication

@03:11 - 04:09 - **Physical Entrainment**

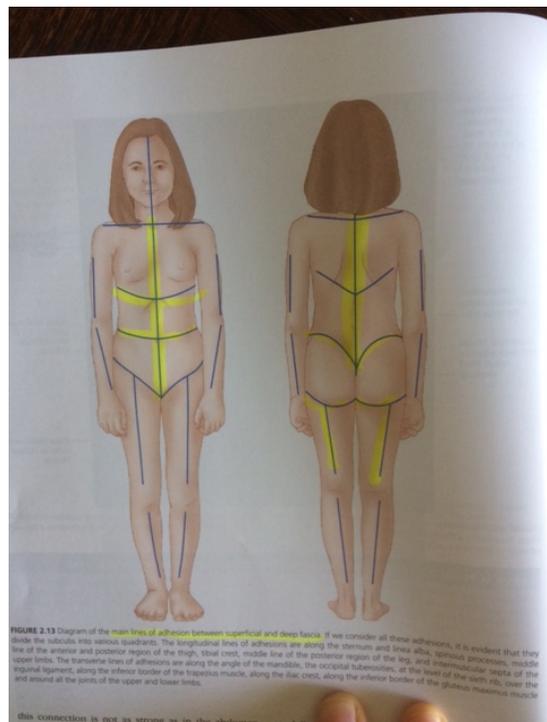
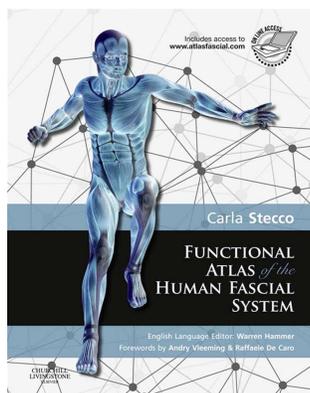
Where is our wood to absorbed the oscillation?

*******WHERE IS OUR piece of WOOD?*******

What absorbs the oscillations?

Perhaps the Fascia! ?

Dr. Carla Stecco of Italy -picture Page 32 -
adhesion lines between superficial and deep fascia.



Sense of SIGHT

Neural entrainment with Dr. Lisa Feldman Barrett and her black and white picture.

Neural Entrainment is your brain making guesses or predictions based on prior information. Is this okay for us? Can this hurt us? Can we eat this? How does this fuzzy animal feel? Let Dr. Barrett show us neural entrainment with a black and white picture from her TED Talk.

You aren't at the Mercy of your Emotions your Brain Creates Them - Dr. Lisa Feldman Barrett

[https://www.ted.com/talks/](https://www.ted.com/talks/lisa_feldman_barrett_you_aren_t_at_the_mercy_of_your_emotions_your_brain_creates_them)

[lisa_feldman_barrett_you_aren_t_at_the_mercy_of_your_emotions_your_brain_creates_them](https://www.ted.com/talks/lisa_feldman_barrett_you_aren_t_at_the_mercy_of_your_emotions_your_brain_creates_them)



@03:33 - 03:43 - But the bottom line is that emotions are not built into your brain at birth. They are just built. To see what I mean, have a look at this. Right now, your brain is working like crazy. Your neurons are firing like

mad trying to make meaning out of this so that you see something other than black and white blobs. Your brain is sifting through a lifetime of experience, making thousands of guesses at the same time, weighing the probabilities, trying to answer the question, "What is this most like?" not "What is it?" but "What is this most like in my past experience?" And this is all happening in the blink of an eye. Now if your brain is still struggling to find a good match and you still see black and white blobs, then you are in a state called "experiential blindness," and I am going to cure you of your blindness. This is my favorite part. Are you ready to be cured?

ENTRAINMENT - Neural and Physical

Entrainment happens every time we see something, but also WHEN WE TOUCH AND WHEN WE ARE TOUCHED!

After an injury, someone is kind and smiles at you; you feel better with the sweetness rather than the sourness of being ignored. That action of a smile, socializes us and bonds us to another person.

When a hero of ours looks at us with a smile or puts an hand on our shoulder and says good job. That is ENTRAINMENT through touch. Or if we forget to take out the trash and our mother yells at us, that is also entrainment.

Every time, we put food in our mouth, when we read, when we listen, when we socialize, when we SMELL and TASTE.....every every second, we are making predications. This is neural entrainment.

SOMETIMES predications are WRONG. "Oops, I misunderstood."
Sometimes they are spot on. "A gut feeling."

Our body clocks help us learn as we sleep. Research has shown, humans make more accurate predications after a good night sleep. The capacity to learn new things also increases after sleep.

Here's an interesting situation. Someone was being interviewed on the Naked Scientist podcast or Science Friday about sleep. I cannot remember which show. This person made a VERY good point.

The Guinness Book of World Records will allow Felix Baumgartner to go to Earth's stratosphere in a hot air balloon, step out of the basket, and plummet to Earth in a free fall which breaks the sound barrier. No problem. BUT the Guinness Book of WORLD Records will no longer allow sleep deprivation records.

Felix Baumgartner's supersonic freefall from 128k'
- Mission Highlights - 01:30
<https://www.youtube.com/watch?v=FHtvDA0W34I>

WHY?????? Is sleep so critical?

The Hawaiian Bobtail Squid MUST sleep in order to allow his little hitchhikers to Quorum Sense for his nocturnal shift work. We will discuss Squidward's cousin in a moment.

Did you know Squidward has a Wikipedia page?
https://en.wikipedia.org/wiki/Squidward_Tentacles

Squidward Q. Tentacles is a fictional character voiced by actor **Rodger Bumpass** in the American **animated television series *SpongeBob SquarePants***. Squidward was created and designed by marine biologist and animator **Stephen Hillenburg**. He first appeared on television in the series' pilot episode "**Help Wanted**" on May 1, 1999.



Circadian Rhythm

Circadian Rhythm is (Circa = about / Dian = a day). Cyanobacteria rose 2 billion years ago. They have their own clocks, and they gave us oxygen in the environment we now live in. Sorry Flat Earth-ers.

A trio of scientists found out more about the oscillation of Body Clocks we inherited. And they received the NOBEL PRIZE in 2017 for this discovery! Lectures with the Nobel Laureates in Physiology or Medicine: Jeffrey C. Hall, Michael Rosbash and Michael W. Young.

Nobel Lecture: Michael Rosbash, Nobel Prize in Physiology or Medicine, 2017

<https://www.youtube.com/watch?v=0X2jY8isna8&t=897s>

@14:38 - whole bodies of flies, no oscillations visible, had to use Heads. In the body there are lots of tissues which do not undergo oscillations and that dampens the signal. So it really was invisible.

@14:52 "It is often in Science a very small change makes all the difference."



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Lectures with the Nobel Laureates in Physiology or Medicine in Aula Medica: Jeffrey C. Hall, Michael Rosbash and Michael W. Young [#NobelPrize](#)
<http://youtu.be/U1r6GyifrE8>

1:05 PM - Dec 7, 2017

Sense of HEARING - Listen CORAL REEF bleaching

Coral Reefs are Quieter

Science Friday - Part 1

May 4, 2018

<https://www.sciencefriday.com/segments/the-reef-is-quiet-too-quiet/>

Rachel Feltman, science editor at Popular Science, joins Ira to talk about **the quiet reef** and other stories from science this week.

In a study published this week in the *Proceedings of the National Academy of Sciences*, researchers monitoring one part of the Great Barrier Reef document a dramatic drop off in undersea sound levels. The scientists compared recordings from 2012 and 2016, and found that the 2016 reef was about 15 decibels quieter than it had been just four years before. The quiet is an indication that not all is well with the reef ecosystem, they say—and the quieter reef lacks some of the auditory cues that species need to survive.

“A healthy reef is alive with music, but the chorus fades as the coral dies. It's bad news for fish when their homes go quiet.” *Popular Science*

By Kat Eschner April 30, 2018

<https://www.popsci.com/coral-reef-degraded-music#page-2>

<https://soundcloud.com/user-845596264/healthy-reef-sounds-2012-and-degraded-2016>

BONES BLEACHING - hypochlorite and hydrochloric acid (Ca PO₄)(OH₂)

Bones can also be bleached. I learned this on a Webinar by Til Luchau - Myofascial Techniques Rib Cage - November 6, 2016

(Bleach kills bendy proteins collagen - bone becomes brittle. Acid kills hard minerals - bone becomes bendy). Bone is made of mineral (about 50%) + organic (mainly collagen).

The world's most extraordinary people. with Dr Gabriel Weston

<https://urplay.se/program/204598-enastaende-manniskor-design-for-liv>

Bone has two unique traits. It needs a combination of protein and calcium salts.

@ 19:21-20:42 - Chicken bone dissolved

Bones when they become brittle loose a lot of essential critters living inside of them. They become porous = osteoporosis. Bone without mechanical loading nor gravity loading, loses the very minerals which make it strong.

Page 6 book: **FASCIA in Sport and Movement** by Robert Schleip and Amanda Baker.

“Good news for tissue renewal: if the connective tissue structures are loaded properly, the inherent networking cells, called fibroblasts, adapt their matrix remodeling activity so the tissue architecture responds even better to daily demands. Not only does the density of bone change, as happens with astronauts who spend time in ZERO gravity wherein the bones become more porous (*Ingber D.E. 2008*), fascial tissues also react to their dominant holding patterns.

Ingber D.E. 2008 - “Tensegrity and Mechanotransduction”. Journal of Bodywork Movement Therapies. 12: 198-200.

This is important to Fascia Research, in my opinion, as biofilms crystalize or calcify as a protection mechanism, similar to the example in the lecture of the bacteria, *Pseudomonas aeruginosa's biofilm* in Cystic Fibrosis. Therefore perhaps, biofilms can loose their essential critters as well.

Tonsil stones, kidney stones, stone child - a biofilm can calcify and be protective as the same time.

A **lithopedion** – also spelled **lithopaedion** or **lithopædion** – (Ancient Greek: λίθος = stone; Ancient Greek: παιδίον = small child, infant), or **stone baby**, is a rare phenomenon which occurs most commonly when a fetus dies during an abdominal pregnancy,^[1] is too large to be reabsorbed by the body, and calcifies on the outside as part of a foreign body reaction, shielding the mother's body from the dead tissue of the fetus and preventing infection.
(<https://en.wikipedia.org/wiki/Lithopedion>)

Go to the Mütter Museum in Philadelphia, Pennsylvania USA to see a actual stone baby.

<http://muttermuseum.org/collections/other-collections/>

Lithics - This word refers to any stone created by the human body, including kidney, bladder, and gallstones. Many lithics are on display and in storage in the Museum vaults, including some lithics that originated in our curator's body.

Ancient BONES - ANTIBIOTICS found in them. Why did antibiotics travel to the bones?

Egyptian Bread Beer - mold and antibiotic tetracycline. - Soon to come BLOG "BONES and YEAST".

Sawbones Podcast:

Sawbones: A Martial Tour of Misguided Medicine, medical Dr. Syndee McElroy and her husband Justin discuss a range of medical topics. On an episode "Antibiotics" (02/02/2018) discussed the Egyptians bread beer.

<https://itunes.apple.com/se/podcast/sawbones-a-marital-tour-of-misguided-medicine/id665149280?l=en&mt=2&i=1000401325815>

@5:00 - Egyptians rubbed bread mold on skin wound that was not healing well. Records have been found recording the use of mold to treat infections in Egypt, Greece, Rome, China, and Siberia.

@6:46 - they would brew a chunky bread beer

@9:00 - Egyptian beer recipe prescribed for constipation, ill health, overall feel better - found in bones the antibiotics tetracycline.

@9:31 - we have found tetracycline (a fermented antibiotic) in the bones of Egyptians. It came from the bread beer that was consumed so often as it was considered a health drink.

SEA PEN

The weird, wonderful world of bioluminescence I Edith Widder - TED 2011

https://www.ted.com/talks/edith_widder_the_weird_and_wonderful_world_of_bioluminescence

@7:00 - this looks like a plant, but it's actually an animal. And it anchors itself in the sand by blowing up a balloon on the end of its stock. So it can actually hold itself in very strong currents, as you see here. But if we collect it very gently, and we bring it up into the lab and just squeeze it at the base of the stock, it produces this light that propagates from stem to the plume, changing color as it goes, from green to blue.

@7:34 - Here's another one. This is also a sea pen. It's got a brittle star hitching a ride. It's a green saber of light. And like the one you just saw, it can produce these as bands of light. So if I squeeze the base, the bands go from base to tip. If I squeeze the tip, they go from tip to base. So what do you

think happens if you squeeze it in the middle? (Gasps) I'd be very interested in your theories about what that's about.

QUORUM SENSING - BONNIE BASSLER

The Hawaiian Bob Tail Squid is a nocturnal animal, a shift worker. The story of a water dwelling shift worker is intriguing. These animals produce the light called bioluminescence by *Vibrio Fischeri*. Bacteria are too small to be seen; therefore, the light they make can be studied. The bioluminescence of Mr. Hawaiian Bob-Tail Squid's little hitchhikers produce a light which can be seen.

The fact is, it was there ALL the time! We just did not know about *Vibrio Fischeri's* collective activity. Until Bonnie Bassler of Bassler Labs at Princeton came along, that is:

See Blog #10 - Sunday 11 mars 2018
<http://bfs.uggleboterapi.se/#post9>
"USA Trio - Swedish Nobel Prize"

The Language of Light.....

Bonnie Bassler at Princeton's Bassler Labs has coined the phrase "Quorum Sensing" for the bacteria which is responsible in providing the nocturnal Hawaiian Bob-Tail Squid with its cloaking device survival skills. Her lab has also seen first hand biofilms' virulence factors where bacteria secrete a polysaccharide matrix film in order to protect the collective. Knut Drescher, a physicist in her labs, **He said, "The world works under pressure driven flow." It is more about curves than flat surfaces. Everything has curves, only in the lab are samples grown in flat surfaces.**

Manipulating Quorum Sensing -

Augsburg College - April 2014

<https://www.youtube.com/watch?v=yhID9IUqzE0>

@50:00 – biofilms start from the inside out, not the outside in - that is why medical and industrial devices fail !

Karolinska Research Lectures: Bonnie L. Bassler - discusses Confocal Microscopy!!!!

<https://www.youtube.com/watch?v=IUgu7Qy8GGA&t=111s>

@42:35 Microbiome cells - one of the substrates they live on is mucin*. That is the mucus that covers our intestinal cells.

Dr. Helene Langevin discusses this at Grand Rounds at Harvard, April 3rd.

The "New Organ" in the News: Is it Real and What Does It Mean?

April 3, 2018

<https://bwhedtech.media.partners.org/programs/integrative/integrative20180403langevin/>

@13:00 "Confocal microscopy is not a new technique."

***Mucins** (/ˈmjuːsɪn/) are a family of high **molecular weight**, heavily **glycosylated proteins** (**glycoconjugates**) produced by **epithelial** tissues in most **animals**.^[1] Mucins' key characteristic is their ability to form **gels**; therefore they are a key component in most gel-like secretions, serving functions from lubrication to cell signalling to forming chemical barriers.^[1] They often take an inhibitory role.^[1] Some mucins are associated with controlling **mineralization**, including **nacre** formation in **mollusks**,^[2] **calcification** in **echinoderms**^[3] and bone formation in vertebrates.^[4] They bind to pathogens as part of the immune system.

SUGAR - theory

Sugar is the enemy of today. We have been told Cholesterol was bad to eat too. Limit your eggs! No bacon! As a kid I was warned *NOT* to eat Almonds and Avocados because they were high in fat. NOW, there seems to be a revolution about sugar.

The fluid of the extra cellular matrix is proteoglycan soup = protein + **glycosylated** sugar. The prefix letters *glu-* *gly-* or suffix letters *-ide* like di-/ tri-saccharide(s) or *-ose*, *Lactose*. Usually indicate a sugar. See *Glycation and Proteoglycans*.

“AGE’s - advanced *glycation* end products are in tissues of people that have had tendon ruptures.” says Professor Jill Cook. “..... but some anti-inflammatories will stop or calm the cells down and also limit the amount of *proteoglycans* they can express. So they [anti-inflammatories] inhibit the expression of *proteoglycans*, so the more calm the tendon cells are the less *proteoglycans* they produce, the less matrix destruction we get.” (professor Jill Cook - <http://physioedge.com.au/wp-content/uploads/2011/10/Podcast-5-Jill-Cook.pdf>)

When we make the technology, we can find out if bacteria quorum sense in this matrix. This is a theory, soon we will have the technology advanced enough to know this for fact.

But the fact is: Bacteria are fed sugar. Yeast is a sugar fungus. Interestingly, I was taught Vitamin B12 came from beef: cheese, liver, milk, blood sausage. Cows eat grass, at least they were designed to graze on grass. So, please SOMEONE, explain to me how Nutritional Yeast is a source of Vitamin B12 as well !?

Science Friday - Part 2

The Rise of the Yeast - mycologist Nicholas Money

April 27, 2018

<https://www.sciencefriday.com/segments/the-yeast-also-rises/>

08:30 - NICHOLAS MONEY: The one that we use in general, for baking and brewing is a thing called *saccharomyces*, the sugar fungus. But the sourdough yeast is different. It’s a species of thing called *Candida*. But the important point about sourdough breads is that they have bacteria, species of *lactobacillus* that are actually responsible for acidifying and giving that sour taste to the bread.

Annu Rev Cell Dev Biol. 1996;12:129-60.

ACTIN: general principles from studies in yeast.

Ayscough KR1, Drubin DG.

<https://www.ncbi.nlm.nih.gov/pubmed/8970724?dopt=Abstract>

The protein sequences and biochemical properties of actin and its interacting proteins and the pathways that regulate these interactions all appear to be conserved, indicating that principles elucidated from studies in the yeast *Saccharomyces cerevisiae* will apply to all eukaryotes.

POTATO SOUP = Sugar + Protein. Dr. Carol Davis referred the *proteoglycan* soup of the body at the PreBFS Biotensegrity Conference 2018 as, “Potato Soup”. <http://www.johnsharkeyevents.com/new-events-2/2018/5/11/biotensegrity-bfs-pre-conference-day-solihull-uk-2018>

Glycosaminoglycans (GAGs) or *mucopolysaccharides* are long chains of *disaccharides* based into 4 groups.

- Heparin/heparan sulfate (HSGAGs)
- Chondroitin sulfate / dermatan sulfate (CSGAGs)
- Keratan sulfate
- Hyaluronic acid also called Hyaluronan

Hyaluronan

See Blog #3 - söndag 21 januari 2018

"Stiffness or Suppleness"

<http://bfs.uggleboterapi.se/#post2>

A Swede, Olaus Rudbeck the Elder, pioneered the Lymphatic System at Uppsala University. At the young age of 21, he approached Queen Christina of Sweden with an idea: fluid other than blood flowed through the body and was immune related. At the same moment in time 1652, without the Internet nor telephones, other researchers were reaching similar conclusions.

So - what is the language of the body? Bone, Muscle, Tendon, Ligament, Blood? At the OSHER Joint Conference Panel Discussion Mr. Fascia himself, Robert Schleip PhD asked important questions. The answer gives me pause - - the language is Fascia and where it lives. Key words: stiffness and suppleness and fluid!

Hyaluronan

Panel Discussion, OSHER Joint Conference, Nov. 2015
Osher Center for Integrative Medicine
<https://www.youtube.com/watch?v=hHUjmHXli8>

Q: 38:25 - 38:55 - Audience member asks about Suppleness

"Yin is that which creates suppleness in the body. Yin deficiency created 2 ways. One: a yin deficiency is created by a blockage. Second: a yin deficiency is created by not enough suppleness."

"How do we create suppleness in the body?"

A: multiple panelist answer

Q: 1:01:10-1:01.41 - Robert Schleip PhD, Ulm University

"My question is about Hyaluronan and how it may be involved in the stiffness regulation. We learned from the Steccos, that it may make a difference whether the stiffness comes from the fibres, then it is called 'Fibrosis'. Or whether the stiffness comes from a change in the ground substance. And one way the Ground Substance may be influenced is by Hyaluronan.

And is that involved in any of the stiffing you have been observing?

And can we influence it with stretching or exercise?

A: 1:01:42 Patricia Keely, PhD

Professor and Chair Department of Cell and Regenerative Biology, University of Wisconsin—Madison
"Tissue Stiffness and Cancer Growth"

"So a few things about Hyaluronan....." Allissa paraphrases Prof Keely's response: 'the former post doc in her field regarding pancreatic cancer, pancreatic cancer has a lot to do with fibrosis. If one degrades Hyaluronan with Hyaluronidases, then puts it into a pancreas with cancer, one can get chemotherapy drugs in to the pancreas better. The problem with pancreatic cancer is the pancreas is so fibrotic and so stiff, the cancer drugs don't get into it.'

HYALOCYTES

Bacteria and microbes are said to live in our guts. But what if they live other places than the gut? In Dr. Ian Crozier's case, The Ebola Virus lived in his eye.

A SUPER AMAZING and PAINFUL situation happened to an American medical doctor Ian Crozier in 2014. Dr. Crozier returned from Sierra Leone with the Ebola virus in September. After treatment, his blood was declared free from the virus. He went home in October to live with severe back pain. At home rehabilitating, his blue eye turned green. Doctors stuck a needle in his eye to remove some fluid. The fluid tested positive for the Ebola virus.

Dr. Ian Crozier's situation intrigues me. The blood was free from virus, yet the virus set up shop in his eye. AND it changed the color of his eye. Vitritis or Hyalitis - an inflammation of the vitreous body.

Wikipedia: Hyalocytes

also known as **vitreous cells**, are cells of the **vitreous body**, which is the clear gel that fills the space between the lens and the retina of the **eye**. Hyalocytes occur in the peripheral part of the vitreous body, and may produce **hyaluronic acid**, **collagen**, [1] fibrils, and **hyaluronan**. [2]

Wikipedia: **human eye**

non-image-forming [photosensitive ganglion cells](#) in the retina receive light signals which affect adjustment of the size of the pupil, regulation and suppression of the **hormone [melatonin](#) and [entrainment of the body clock](#)**.^[3]

3. Zimmer, Carl (February 2012). "Our Strange, Important, Subconscious Light Detectors". Discover Magazine. Retrieved 2012-05-05

Interview Dr. Ian Crozier with Anderson Cooper

<http://edition.cnn.com/2015/05/08/health/ebola-eye-american-doctor/>

American doctor declared free of Ebola finds the virus in his eye months later

By Faith Karimi and Joshua Berlinger, CNN

May 9, 2015

END-

The telephone game phrase given at the beginning was revealed. The phrase "To Find the Keys, Look Beyond the Light" was whispered to 20 people in the room. The game of telephone broke down with 20 people playing. How do trillions of bacteria communicate well when 20 people cannot do it successfully?

The answer - several inputs or algorithms all working simultaneously. Checking and double checking and making predications along the way. We need our 8 Senses delivered by the Fascia. When one Sense fails, the others come to the rescue. Senses can be OverLoaded as well !

DR. ROBERT FINDLEY at Joint Conference.

Panel Discussion, OSHER Joint Conference - November 2015

OSHER Center for Integrative Medicine - Published February 17, 2016

https://www.youtube.com/watch?v=_hHUjmHXIi8

@36:22 - 37:10 - Dr. Tom Findley

Professor of Physical Medicine and Rehabilitation, Rutgers, New Jersey Medical School, VA New Jersey Health Care System

"Looking for keys under the light.....muscle does not get cancer metastasis very much. So why is it so resistant? Muscle actually makes a small molecular product that you can filter out of a muscle cell culture which will kill tumor cells - so activating muscle may have protective effects elsewhere in the body not just on muscle...."

If the keys are lost, are we finding them by looking in the light?

Why do muscles not get cancer?

Let us start looking beyond the light. When we build the technology, we can find out if bacteria quorum sense in our matrix. I bet they do!

This is a theory, soon we will have the technology advanced enough to know this for fact.

In embryology, muscles are born within the fascia.

It all comes from the same thing.

"We / Science like to separate and divide and dissect." (Sue Hitzmann)

Your actions are yours but they could be influenced by your microbes. Microbes are powerful negotiators to help determine what one puts in their mouth, or how energy depleted or achey one is when a Virus invades.

***We have to do better.
Families / People are depending on the Sciences to do better.***

We must start “Looking Beyond the Light”.

And to do this: Action from a collective can bridge professions, then the Sciences can quorum sense & act!

THANKS TO:

Wikipedia - I did support you with a donation.

Podcasts:

SawBones, Brain Science, Naked Scientist, Chris Kresser; Revolution Health Radio (RHR), SciFri - Science Friday, Tell Me Something I Don't Know (TMSIDK), Stuff You Should Know, Dr. Rangan Chatterjee's "Feel Better, Live More - 4 Pillars", How's the Pressure, The Health Edge, Revisionist History.

New Podcast coming: Dr. Mark Hyman: Broken Brains Podcast

Broken Brain Podcast - Episode 1: Interview with Dr Rangan Chatterjee.

<https://soundcloud.com/user-196767676/broken-brain-podcast-episode-1>

@14:30 minutes - story of 6 month old convulsing. INTEROCEPTION's Saliency in action!

@78:30 "Consciously change your lifestyle to Unconsciously change your biology."

Dr. Rangan Chatterjee of England fame. The book 4 Pillars of health is released in the USA and Canada with a different name: [How to Make Disease Disappear](#).

TED Talks - Technology Entertainment and Design - ALL OF THEM

You TUBE Heros: Bonnie Bassler; Helen Langevin; Rob Knight; John Cryan, Guila Enders; Carla and Antonio Stecco; Julian Baker; Dr Rangan Chatterjee; Robert Schleip and Leon Chaitow.

Larry and Jannika

Who love me despite my oddities.
And I am lucky to get to go home to them. :)

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