THE BIOPHYSICS OF HEART DISEASE AND COVID INJECTION CLOTTING:

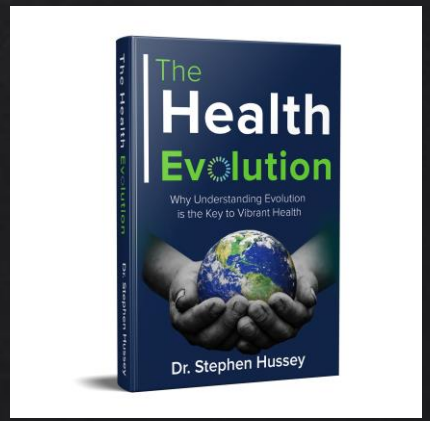
Exclusion Zone Water, Zeta Potential and Virchow's Triad

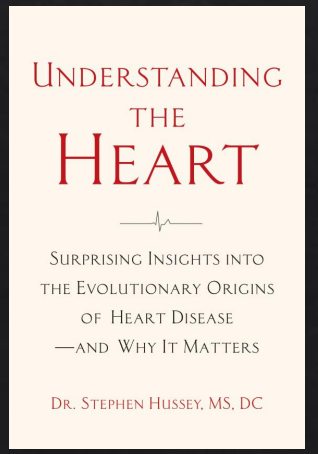
Dr. Stephen Hussey MS, DC

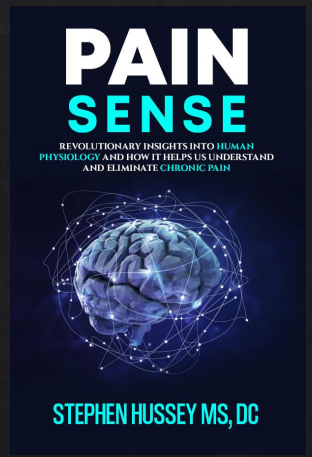
Wise Traditions Conference 2024

About Me

- Grew up in Western North Carolina – lots of chronic disease as a child
- Undergraduate degree in Health and Wellness Promotion from UNC-Asheville
- Doctor of Chiropractic and Masters in Human Nutrition and Functional Medicine from University of Western States
- I have practiced chiropractic for about 11 years. Have practiced in Ireland, South Carolina, and have been in Virginia for the last 7 years.
- In addition to Chiropractic, I do online health consulting, speaking, and have written three books.







I Have Always Been Very Health Conscious

- Ate a whole foods diet
- Exercised regularly
- Avoided toxin exposure
- Managed blood sugars (type 1)

June 16, 2020

Total Calcium Score: 0
RCA: 0
LAD: 0
LCX: 0

Average heart rate: 83 beats per minute.

Impression:

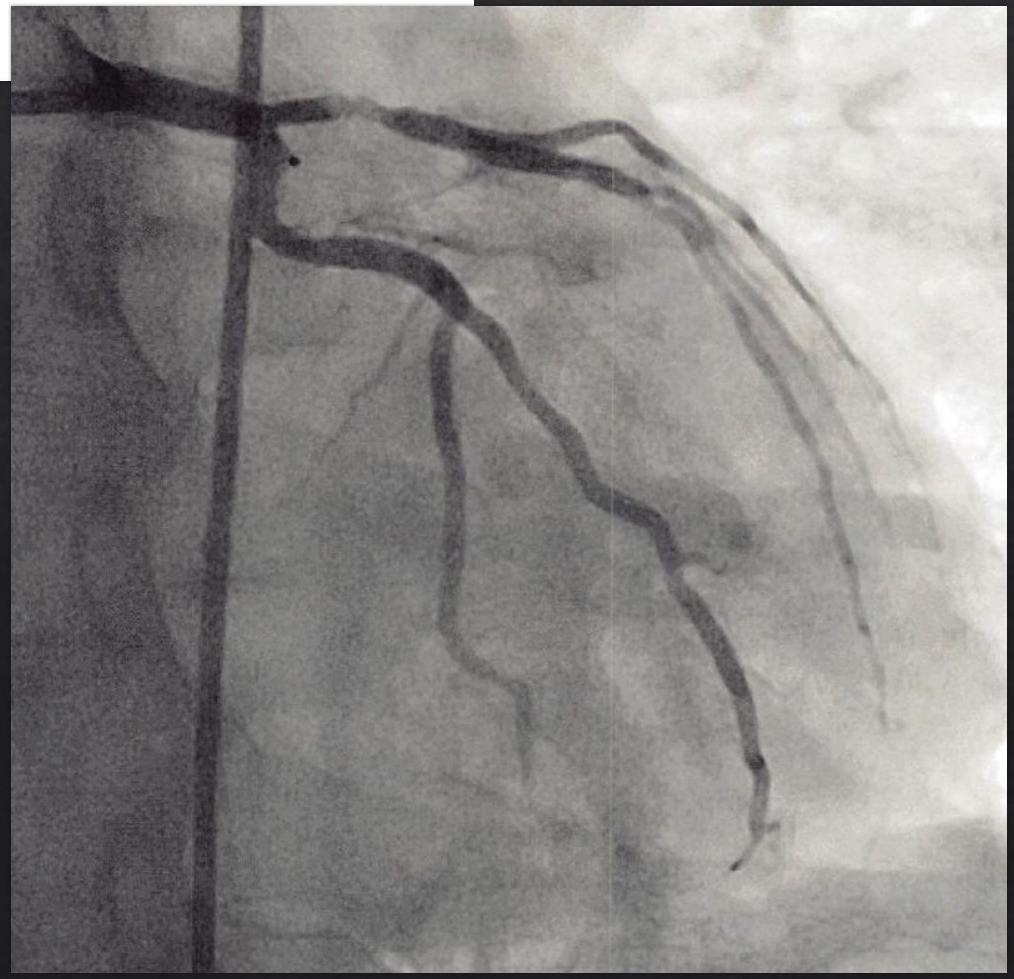
Unremarkable CT heart Calcium Score, with a calcium score of 0

Jan. 5th 2021 - STEMI heart attack in LAD coronary artery

Diagnosis Line	+++ Critical Test Result: STEMINormal sinus rhythm with sinus arrhythmiaSeptal infarct , age undeterminedLateral infarction , possibly acuteMarked ST abnormality, possible inferior subendocardial injury++ ++ ACUTE MI / STEMI ++ ++Abnormal ECGNo previous ECGs available

Component Results

Component	Your Value	Standard Range	Flag
Troponin I	102.30 ng/mL	*<0.30 ng/mL*	CH



No hard plaque. No soft plaque.
Just a clot.

UNILATERAL EXAM-RIGHT
Pt. Name: STEPHEN BRYANT HUSSEY
PT. MPI: 3766255
Pt. MRN: 1112699
DOB: 9/25/1986
Sex: M
Date of Exam: 7/5/2021
Technologist: Kevin Wiseman BS, RVT, RDMS
Referring Physician: Stephen Phillips
Accession Number: 115776081
Facility: Crystal Springs Vascular Lab
IAC Accredited Lab

Ordering Indication: Lower Extremity Pain; s/p cath in jan

Impression:
1. Severe stenosis is seen in the right distal superficial femoral artery with a diameter reduction of 70-99%.

Patient Name: STEPHEN BRYANT HUSSEY
Date of Exam: 1/6/2021
MPI: 3766255
MRN: 1112699
Date of Birth: 9/25/1986
Gender: M
Height: 68 in
Weight: 77.1 kg
BSA: 1.9 mï¿½
Blood Pressure: 127/72 mmHg

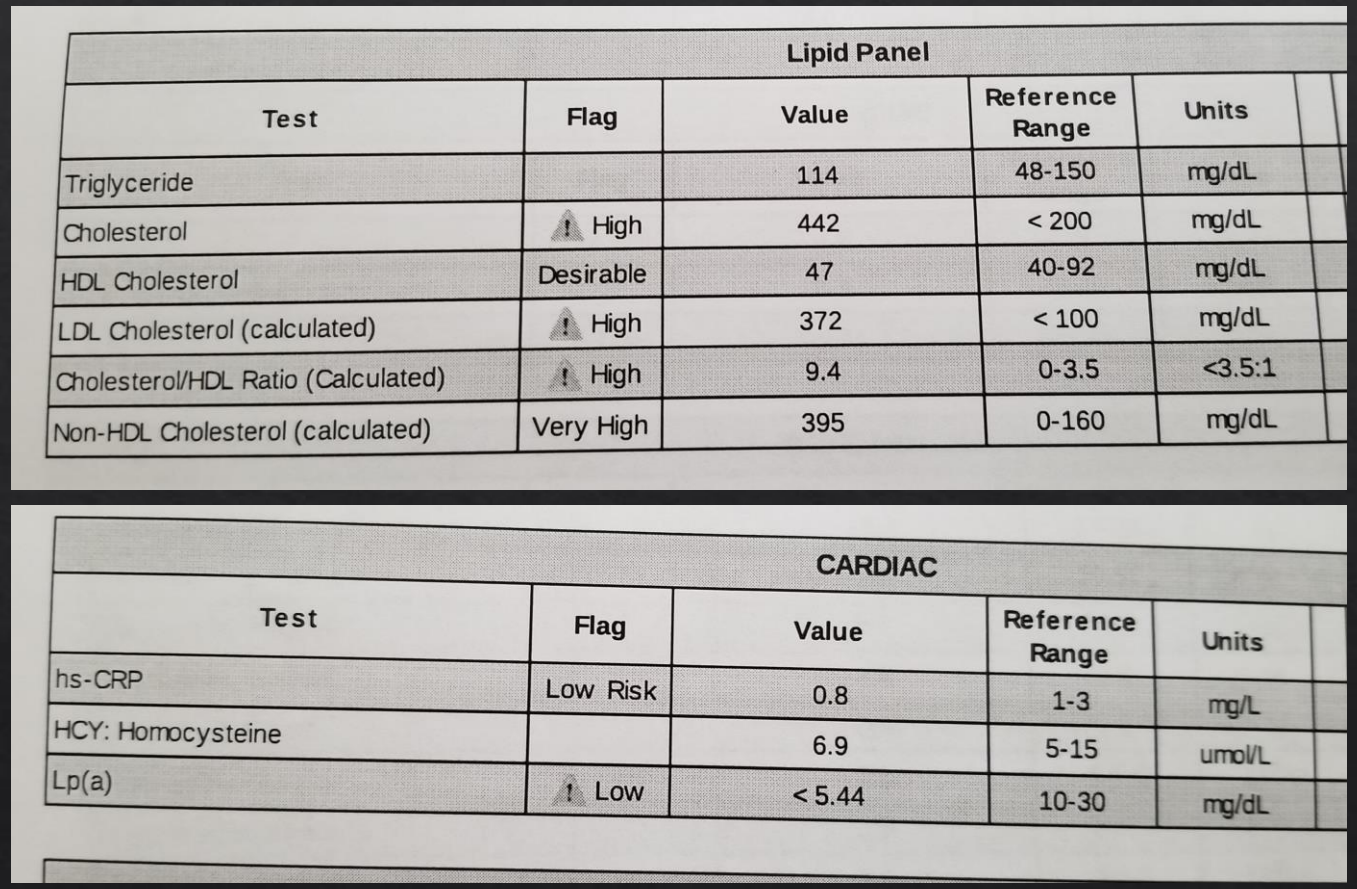
Facility: Carilion Roanoke Memorial Hospital
IAC Accredited Lab
Procedure: 2D Echo/Doppler/Color Doppler
Indication: Chest Pain
Sonographer: Kevin Howald
Referring Provider: V. Ayzenbart MD

Summary
1. Overall left ventricular ejection fraction is estimated at 35 to 40%.
2. Moderately decreased global left ventricular systolic function.
3. Mid and apical anterior septum, apex, and apical lateral segment are abnormal as described in the body of the report.
4. Normal left ventricular diastolic filling.
5. There is no evidence of pericardial effusion.
6. Findings consistent with ischemic heart disease.
7. No intracardiac thrombi, mass or vegetations.

Left Ventricle:
Overall left ventricular ejection fraction is estimated at 35 to 40%. The left ventricular internal cavity size was normal. LV septal wall thickness was normal. LV posterior wall thickness is normal. No evidence of left ventricular hypertrophy. Global LV systolic function was moderately decreased. Spectral Doppler shows normal pattern of LV diastolic filling. Tissue Doppler indicates an equivocal left ventricular filling pressure.

LV Wall Scoring:
The mid and apical anterior septum and apex are akinetic. The apical lateral segment is severely hypokinetic. All remaining scored segments are normal.

“Your Cholesterol is High”



Lipid Panel				
Test	Flag	Value	Reference Range	Units
Triglyceride		114	48-150	mg/dL
Cholesterol	! High	442	< 200	mg/dL
HDL Cholesterol	Desirable	47	40-92	mg/dL
LDL Cholesterol (calculated)	! High	372	< 100	mg/dL
Cholesterol/HDL Ratio (Calculated)	! High	9.4	0-3.5	<3.5:1
Non-HDL Cholesterol (calculated)	Very High	395	0-160	mg/dL

CARDIAC				
Test	Flag	Value	Reference Range	Units
hs-CRP	Low Risk	0.8	1-3	mg/L
HCY: Homocysteine		6.9	5-15	umol/L
Lp(a)	! Low	< 5.44	10-30	mg/dL

How Did the Theory That Cholesterol Causes Heart Disease Come About?

The Diet Heart Hypothesis

- In 1953, Ancel Keys made some bold conclusions based on his six countries study, followed by his seven countries study. He claimed that heart disease was caused by dietary fat consumption.
- Why he neglected to include the data from all 22 countries available data we may never know.

Keys, A. (1957). Diet and the epidemiology of coronary heart disease. *Journal of the American Medical Association*, *164*(17), 1912. doi:10.1001/jama.1957.62980170024007e

Higher Cholesterol Not Associated with CVD but is Associated with Longevity

Review > BMC Geriatr. 2007 Dec 5;7:28. doi: 10.1186/1471-2318-7-28.

9. Conclusion

The idea that high cholesterol levels in the blood are the main cause of CVD is impossible because people with low levels become just as atherosclerotic as people with high levels and their risk of suffering from CVD is the same or higher. The cholesterol hypothesis has been kept alive for decades by reviewers who have used misleading statistics, excluded the results from unsuccessful trials and ignored numerous contradictory observations.

> Scand J Prim Health Care. 2013 Sep;31(3):172-80. doi: 10.3109/02813432.2013.824157.

age: a prospective cohort study among 12.8 million adults

Sang-Wook Yi [1 2], Jee-Jeon Yi [3], Heechoul Ohrr [4]

Affiliations + expand

PMID: 30733566 PMCID: PMC6367420 DOI: 10.1038/s41598-018-38461-y

Free PMC article

in the elderly: a systematic review

Uffe Ravnskov,[1] David M Diamond,[2] Rokura Hama,[3] Tomohito Hamazaki,[4] Björn Hammarskjöld,[5] Niamh Hynes,[6] Malcolm Kendrick,[7] Peter H Langsjoen,[8] Aseem Malhotra,[9] Luca Mascitelli,[10] Kilmer S McCully,[11] Yoichi Ogushi,[12] Harumi Okuyama,[13] Paul J Rosch,[14] Tore Schersten,[15] Sherif Sultan,[6] Ralf Sundberg[16]

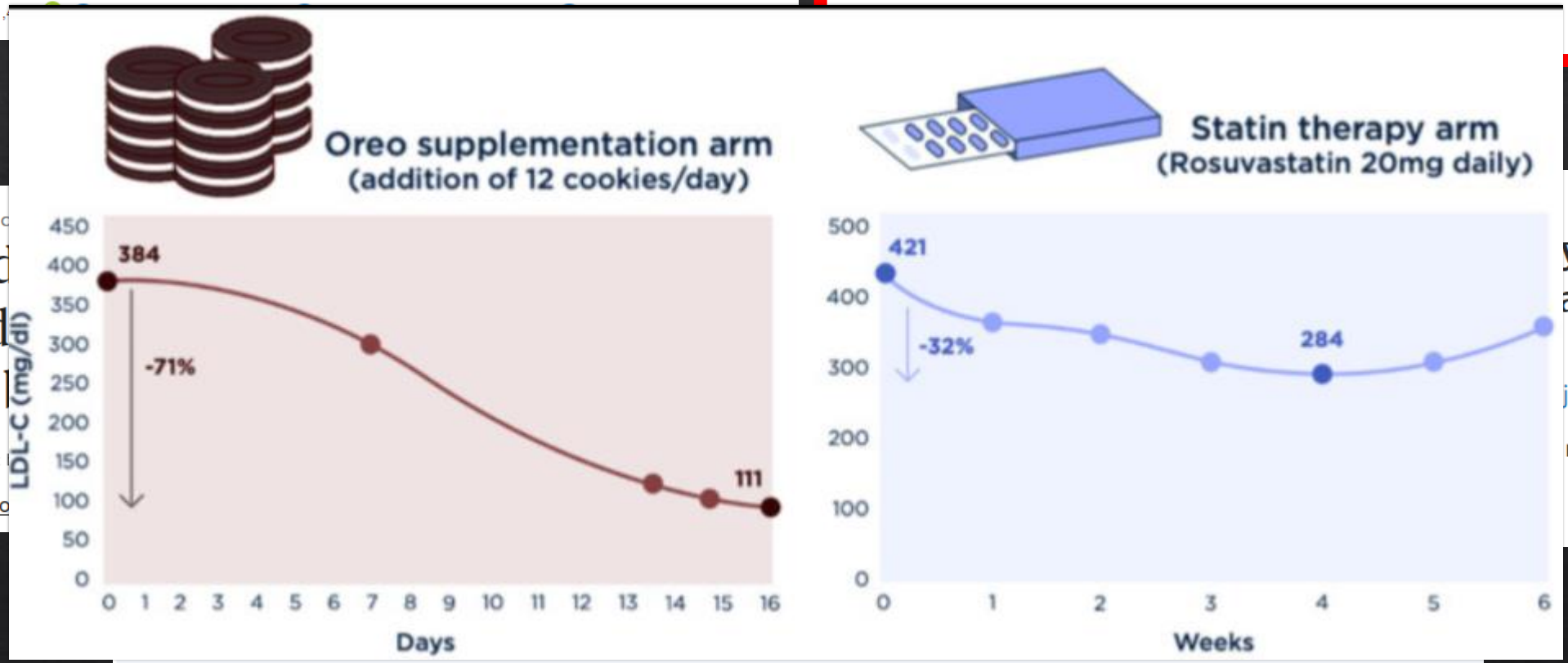
Open Access Hypothesis

The Lipid Energy Model: Reimagining Lipoprotein Function in the Context of Carbohydrate-Restricted Diets

by Nicholas G. Norwitz [1,*], Adrian Soto-Mota [2], Bob Kaplan [3], David S. Ludwig [1,

Open Access Communication

Oreo Cookie Treatment Lowers LDL Cholesterol More Than High-Intensity Statin therapy in a Lean Mass Hyper-Responder on a Ketogenic Diet: A Curious Crossover Experiment



Original Research Artic

Increased
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not high l

Adrian Soto-Mota [a]
Mark A. Pereira [f], Go

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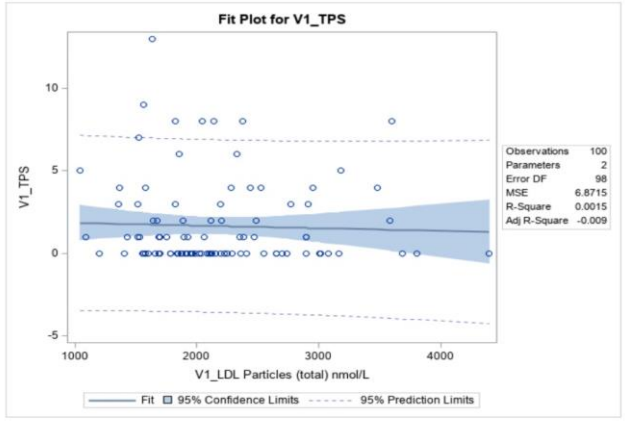
jian, David S Ludwig

nzab144,

These data suggest that, in contrast to the typical pattern of dyslipidemia, greater LDL cholesterol elevation on a CRD tends to occur in the context of otherwise low cardiometabolic risk.

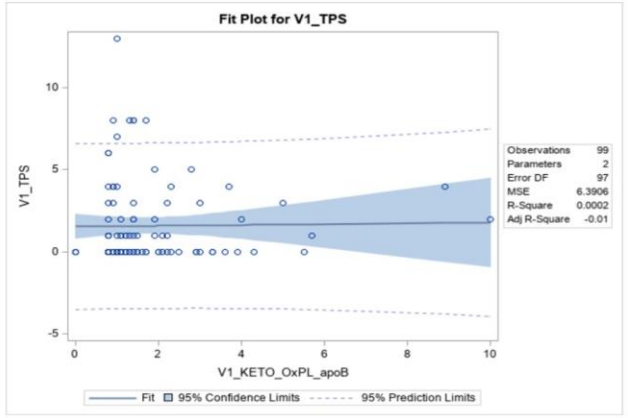
Total Low Density Lipoprotein Particles (LDL-P) vs TPS

Keto-CTA Only



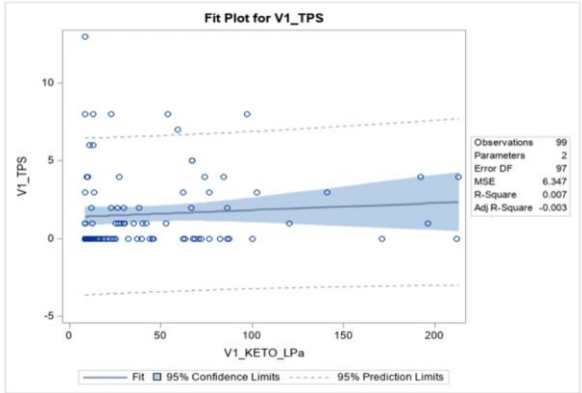
R^2 0.0015 – No correlation between **Total LDL Particles (LDL-P)** and **Total Plaque Score (TPS)**

Total Plaque Score (TPS) vs OxPL-ApoB



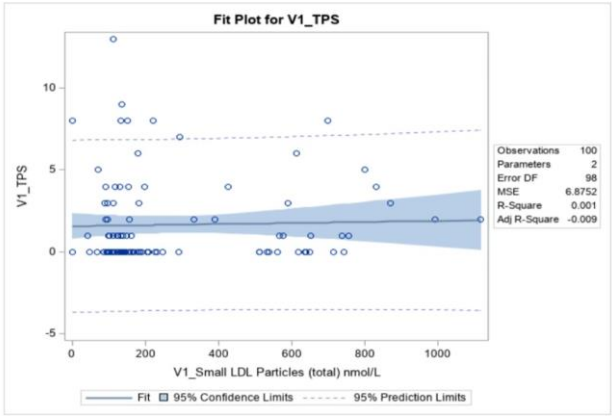
R^2 0.0002 – No correlation between **OxPL-ApoB** and **Total Plaque Score (TPS)**

Total Plaque Score (TPS) vs Lp(a)



R^2 0.007 – No correlation between **Lp(a)** and **Total Plaque Score (TPS)**

Total Plaque Score (TPS) vs Small Dense LDL Particle (sdLDL-P)



R^2 0.001 – No correlation between **Small LDL Particles (sdLDL-P)** and **Total Plaque Score (TPS)**

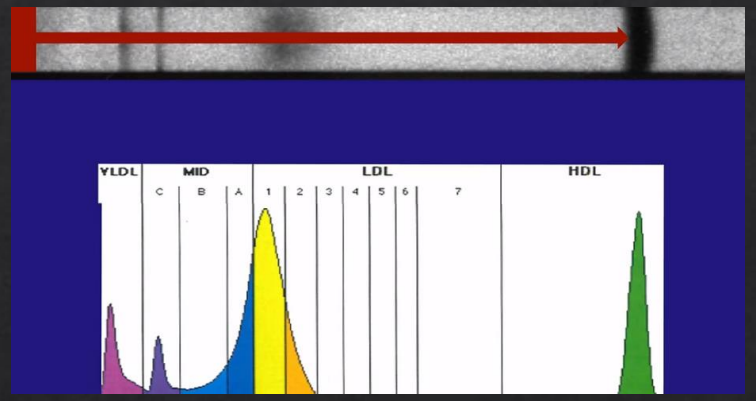
ApoB/ApoA1

Particle Count

LIPID PROFILE

	DESIRABLE	BORDERLINE	HIGH RISK
Cholesterol	<200 mg/dl	200-239 mg/dl	240 mg/dl
Triglycerides	<150 mg/dl	150-199 mg/dl	200-499 mg/dl
HDL cholesterol	60 mg/dl	35-45 mg/dl	<35 mg/dl
LDL cholesterol	60-130 mg/dl	130-159 mg/dl	160-189 mg/dl
Cholesterol/ HDL ratio	4.0	5.0	6.0

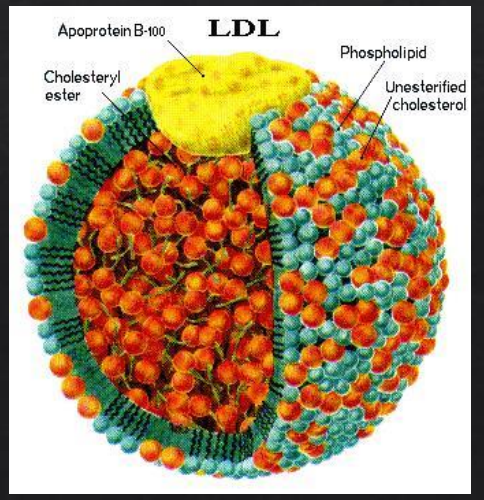
Lipid Panel



LDL vs. HDL

Triglycerides

Particle size



ApoB

Non-HDL/ApoB

Lp(a)

oxLDL

“To reject one paradigm without simultaneously substituting another is to reject science itself.”

- From *The Structure of Scientific Revolutions* by Thomas Kuhn

What happens in atherosclerosis, heart attacks, and strokes?

- Gertz et al.
  - Fibrous tissue (87 ± 8%)
  - Calcific deposits (7 ± 6%)
  - Pultaceous debris (5 ± 4%)
  - Foam Cells (1 ± 1%)

Review > Wien Klin Wochenschr. 1993;105(15):417-24.

Fibrinogen and atherosclerosis

E B Smith [1]

"Fibrin appears to be a multi-potential component of atherogenesis, intervening at virtually all stages of lesion development."

Journal of the American College of Cardiology

Author Manuscript HHS Public Access

The Myth of "The Vulnerable Plaque": Transitioning from a Focus on Individual Lesions to Atherosclerotic Disease Burden for Coronary Artery Disease Risk Assessment

Armin Arbab-Zadeh, MD, PhD and

Valentin Fuster, MD, PhD

Review > J Thromb Haemost. 2008 Feb;6(2):235-42. doi: 10.1111/j.1538-7836.2007.02867.x. Epub 2007 Dec 10.

Platelets modulate atherogenesis and progression of atherosclerotic plaques via interaction with progenitor and dendritic cells

M Gawaz [1], K Stellos, H F Langer

OBESITY AND NUTRITION: EDITED BY ERIC WESTMAN

Assessing cardiovascular disease: looking beyond cholesterol

Kendrick, Malcolm

Author Information

Current Opinion in Endocrinology & Diabetes and Obesity 29(5):p 427-433, October 2022. | *DOI:* 10.1097/MED.0000000000000761

-David Gertz, S., Malekzadeh, S., Dollar, A. L., Kragel, A. H., & Roberts, W. C. (1991). Composition of atherosclerotic plaques in the four major epicardial coronary arteries in patients ≥ 90 years of age. *The American Journal of Cardiology*, *67*(15), 1228-1233. https://doi.org/10.1016/0002-9149(91)90932-b

Br Heart J. 1985 Mar;53(3):265-8. doi: 10.1136/hrt.53.3.265.

Coronary artery disease and haemostatic variables in heterozygous familial hypercholesterolaemia

D D Sugrue, I Trayner, G R Thompson, V J Vere, J Dimeson, Y Stirling, T W Meade

PMID: 3970784 PMCID: PMC4817

Comment Blood. 2011 Dec 22;118(26):6990-1. doi: 10.1182/blood-2011-10-386227.

Increased coagulation factor VIII activity in patients with familial hypercholesterolemia

Roeland Huijgen, John J P Kastelein, Joost C M Meijers

RESEARCH ARTICLE VOLUME 319,

INCREASED BL
INHIBITOR IN T

G.D.O. Lowe • P. Stromberg •

Published: February 27, 1982

:S29-31.

ed fibrinolysis in
to the metabolic

Thromb Haemost. 1980 Feb 29;4

Increased plasma
in type II hyperlip

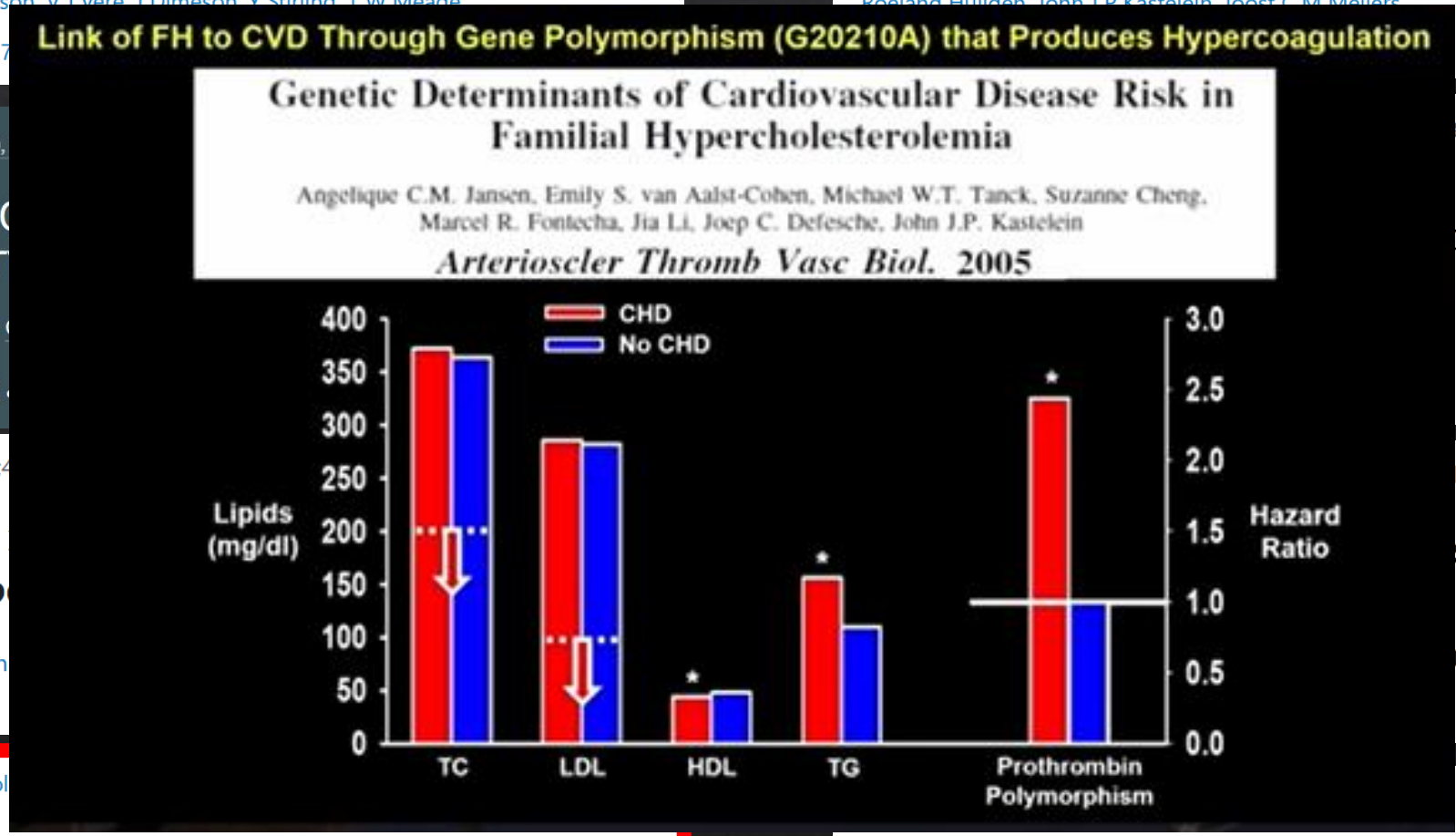
G D Lowe, M M Drummond, J L Th

PMID: 7368154

b 15;113(3-4):113-8.

sulin resistance in
infarction with
olesterolemia

Link of FH to CVD Through Gene Polymorphism (G20210A) that Produces Hypercoagulation



Arterioscler Thromb Vasc Biol
Epub 2005 May 5.

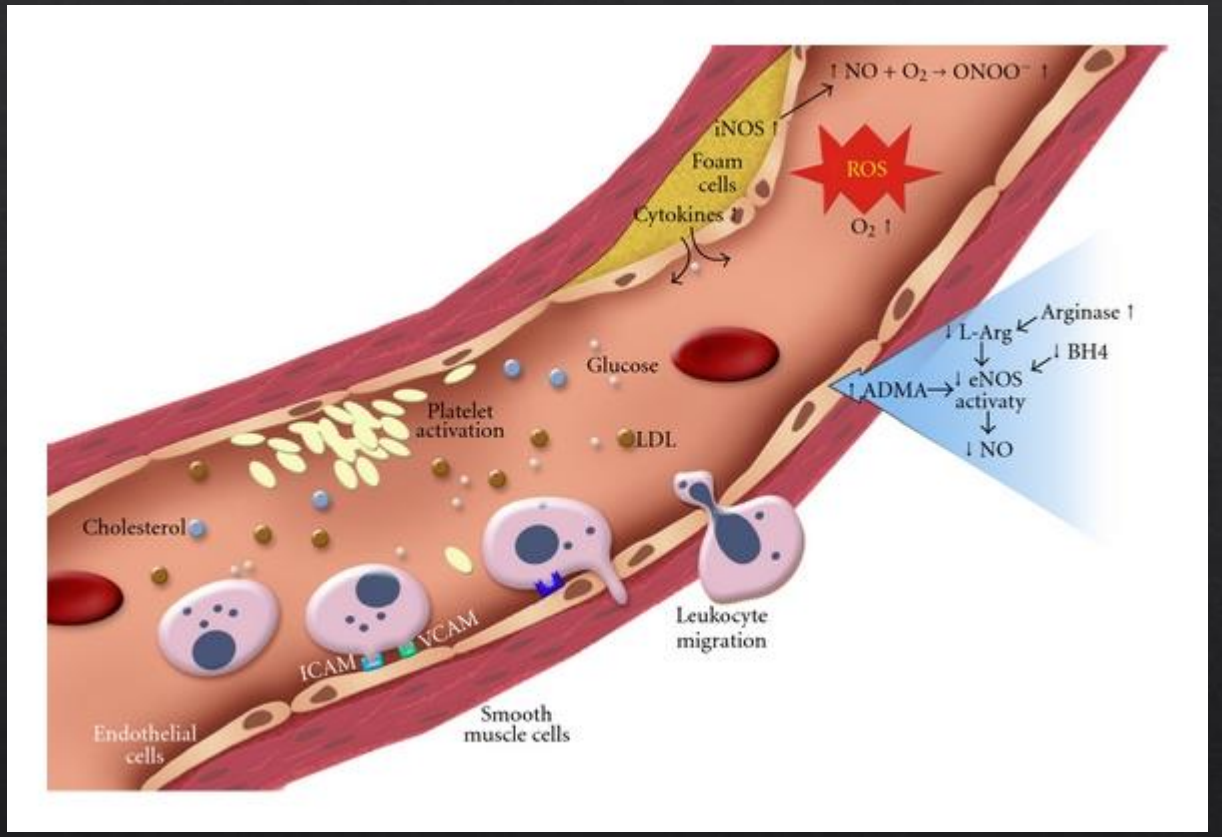
Genetic determinants of cardiovascular disease risk in familial hypercholesterolemia

Angelique C M Jansen [1], Emily S van Aalst-Cohen, Michael W T Tanck, Suzanne Cheng, Marcel R Fontecha, Jia Li, Joep C Defesche, John J P Kastelein

A common prothrombin variant (20210 G to A) increases the risk of myocardial infarction in young women

F R Rosendaal [1], D S Siscovick, S M Schwartz, B M Psaty, T E Raghunathan, H L Vos

Why does the body initiate clots?



Virchow's Triad (1856) – endothelial damage, hypercoagulability, hemodynamic changes

Sources of Oxidative Stress That Damages The Artery Lining

Glucose Based Metabolism	Oxidized Fats	Heavy Metals	"Infectious" Illness
Fluctuating Blood Sugars	Endotoxemia	Smoking/Air Pollution	Decreased Endothelial Progenitor Cells
Advanced Glycation End-Products	Psychological Stress	Bisphenol-A	Insulin Resistance

Erythrocyte Sedimentation Rate (ESR)

Risk factors for ischaemic vascular death for men in the Stockholm prospective study ☆

This paper is dedicated to Dr. Kritchevsky on the occation of his 60th birthday.

Lars-Erik Böttiger, Lars A. Carlson

Original article

Erythrocyte sedimentation rate and coronary heart disease: The NHANES I epidemiologic follow-up study

Richard F. Gillum, Michael E. Mussolino, Diane M. Makuc

Erythrocyte sedimentation rate as a marker of inflammation and ongoing coagulation in stroke and transient ischaemic attack

J E Swartz, B F Jacobson, M D Connor, P L Bernstein, V U Fritz

JOURNAL ARTICLE

Erythrocyte Sedimentation Rate, an Independent Predictor of Coronary Heart Disease in Men and Women: The Reykjavik Study FREE

Margret B. Andresdottir, Nikulas Sigfusson, Helgi Sigvaldason, Vilmundur Gudnason

American Journal of Epidemiology, Volume 158, Issue 9, 1 November 2003, Pages 844–851, https://doi.org/10.1093/aje/kwg222

Published: 01 November 2003

Inflammation, as Measured by the Erythrocyte Sedimentation Rate, Is an Independent Predictor for the Development of Heart Failure FREE ACCESS

Heart Failure

Erik Ingelsson, Johan Årnlöv, Johan Sundström, and Lars Lind

J Am Coll Cardiol. 2005 Jun, 45 (11) 1802–1806

Schattauer GmbH Stuttgart

Residence Time in Niches of Stagnant Flow Determines Fibrin Clot Formation in an Arterial Branching Model - Detailed Flow Analysis and Experimental Results

Armin J Reininger , Cornelia B Reininger , Ulrich Heinzmann , Laurenz J Wurzinger

› Author Affiliations

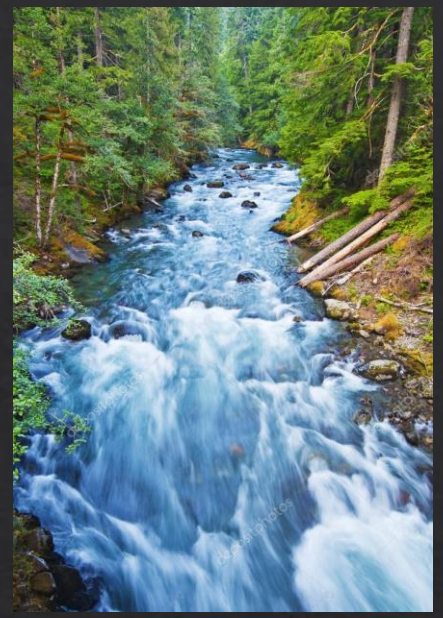
› Further Information

Abstract | PDF (414 kb) | References

› PDF Download › Buy Article › Permissions and Reprints

Summary

Deposition of blood components in branching flow has been investigated primarily with regard to platelets. We instead examined thrombin-induced fibrin clot formation in separated laminar as well as turbulent branching flow. The most rapid clot growth and largest clot mass was obtained at the lowest inflow rate. Increased inflow reduced the clot size and turbulence completely prevented clot formation. Examination of corresponding flow conditions revealed the recirculation zone in laminar flow to be characterized by two stationary, counterrotating vortices. Niches of stagnant flow, exhibiting long residence times, low wall shear rates and characterized by convergent flow, were spared between the bulk flow and these vortices. Here, fibrin clot growth continued even when shear rates were increased more than 100-fold. Our results indicate that, in branching flow, the long residence times and convergent flow characteristic of flow niches rather than shear rate are critical for fibrin clot formation.



Full Length Article

Hemodynamics associated with atrial fibrillation directly alters thrombotic potential of endothelial cells

Michael B. Simmers [a 1], Banumathi K. Cole [a 1], Martin L. Ogletree [b], Zhu Chen [b], Yiming Xu [b], Ling-jie Kong [b], Nigel Mackman [c], Brett R. Blackman [a], Brian R. Wamhoff [a]

attenuated fibrin deposition thickness while increasing fibrin density at the endothelial cell surface. This study suggests that altered hemodynamics associated with AFib play a key role in driving the thrombotic potential of the LAA endothelium.

ApoB/ApoA1

Particle Count

LIPID PROFILE

	DESIRABLE	BORDERLINE	HIGH RISK
Cholesterol	<200 mg/dl	200-239 mg/dl	240 mg/dl
Triglycerides	<150 mg/dl	150-199 mg/dl	200-499 mg/dl
HDL cholesterol	60 mg/dl	35-45 mg/dl	<35 mg/dl
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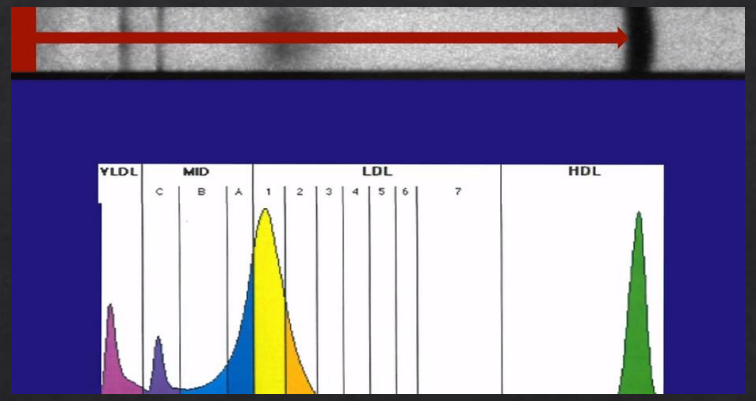
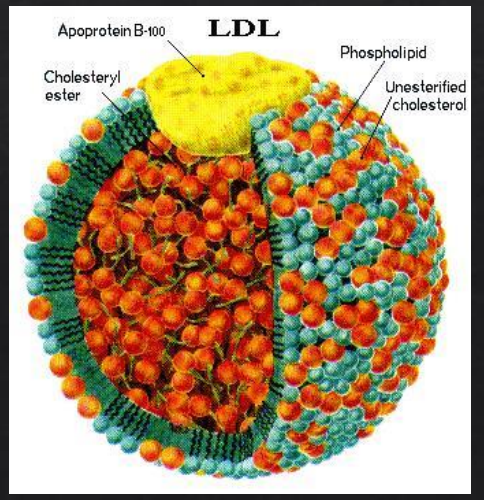
Lipid Panel



LDL vs. HDL

Triglycerides

Particle size



ApoB

Non-HDL/ApoB

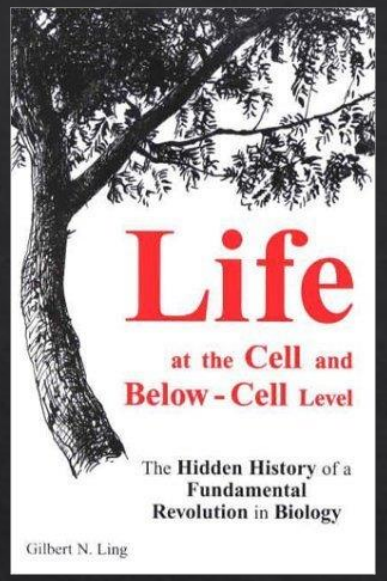
Lp(a)

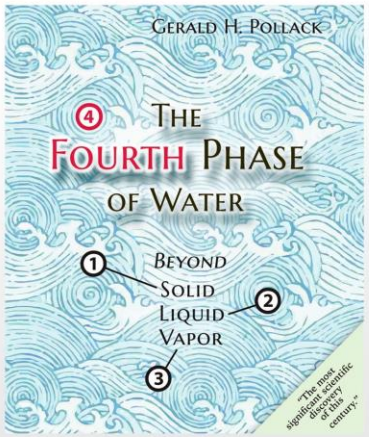
oxLDL

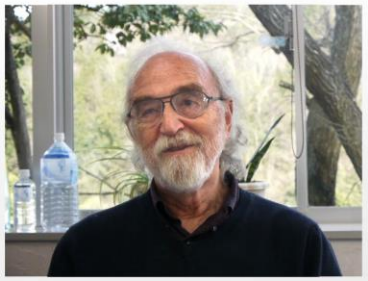
“We can not solve our problems with the same level of thinking that created them.”

-Albert Einstein

Exclusion Zone Water

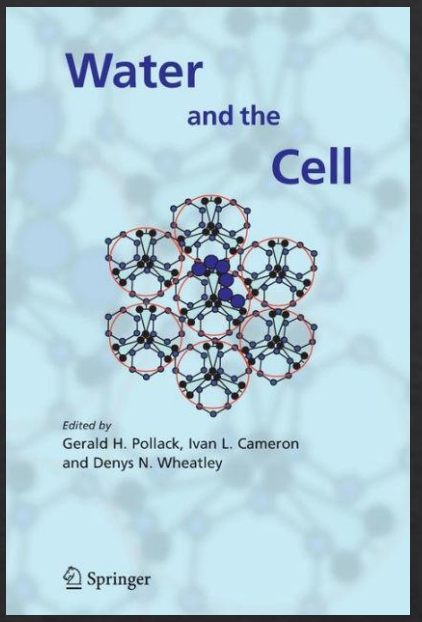




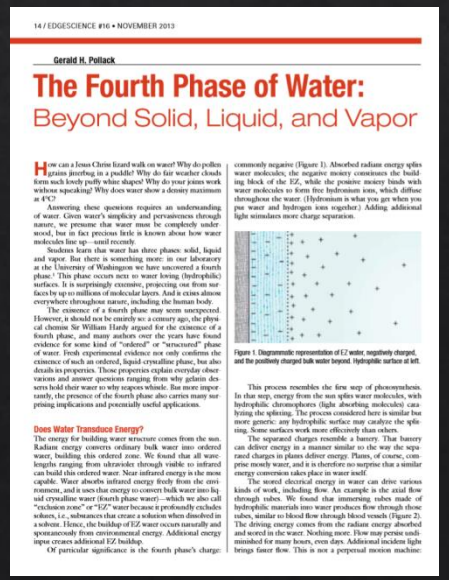


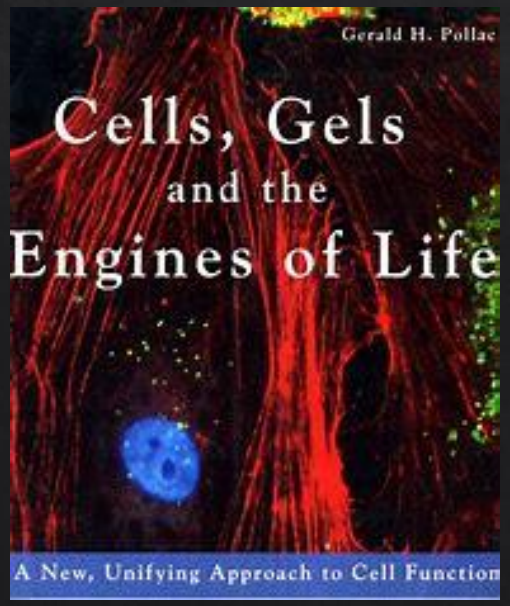
Dr. Gerald H. Pollack

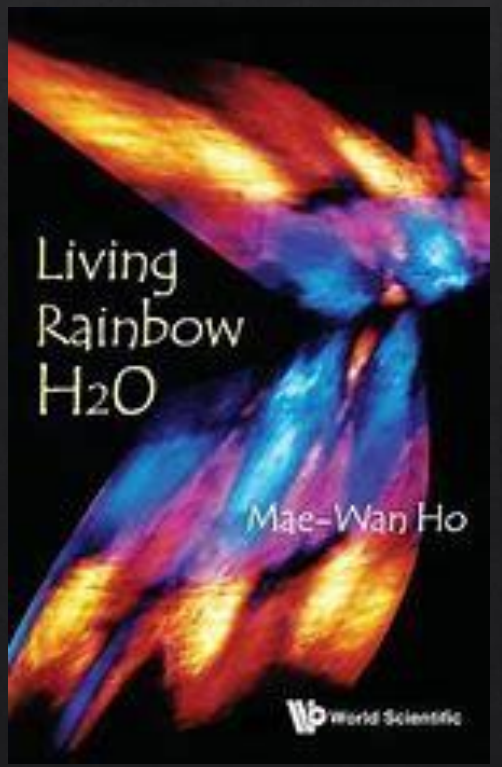
Professor of Bioengineering
at the University of Washington
and author of *The Fourth Phase of Water*



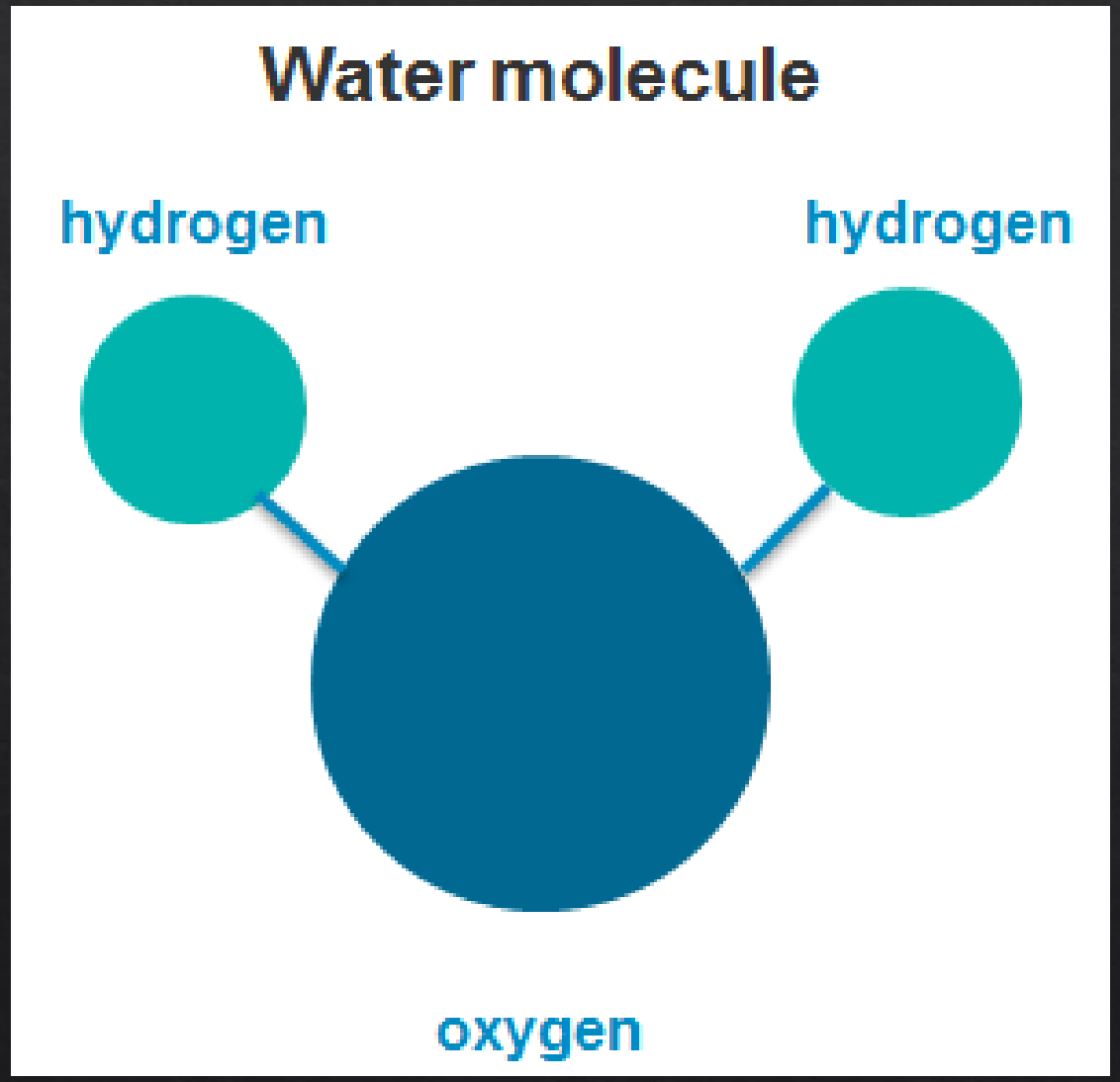
Gilbert N. Ling, PhD
Damadian Foundation for
Basic and Cancer Research

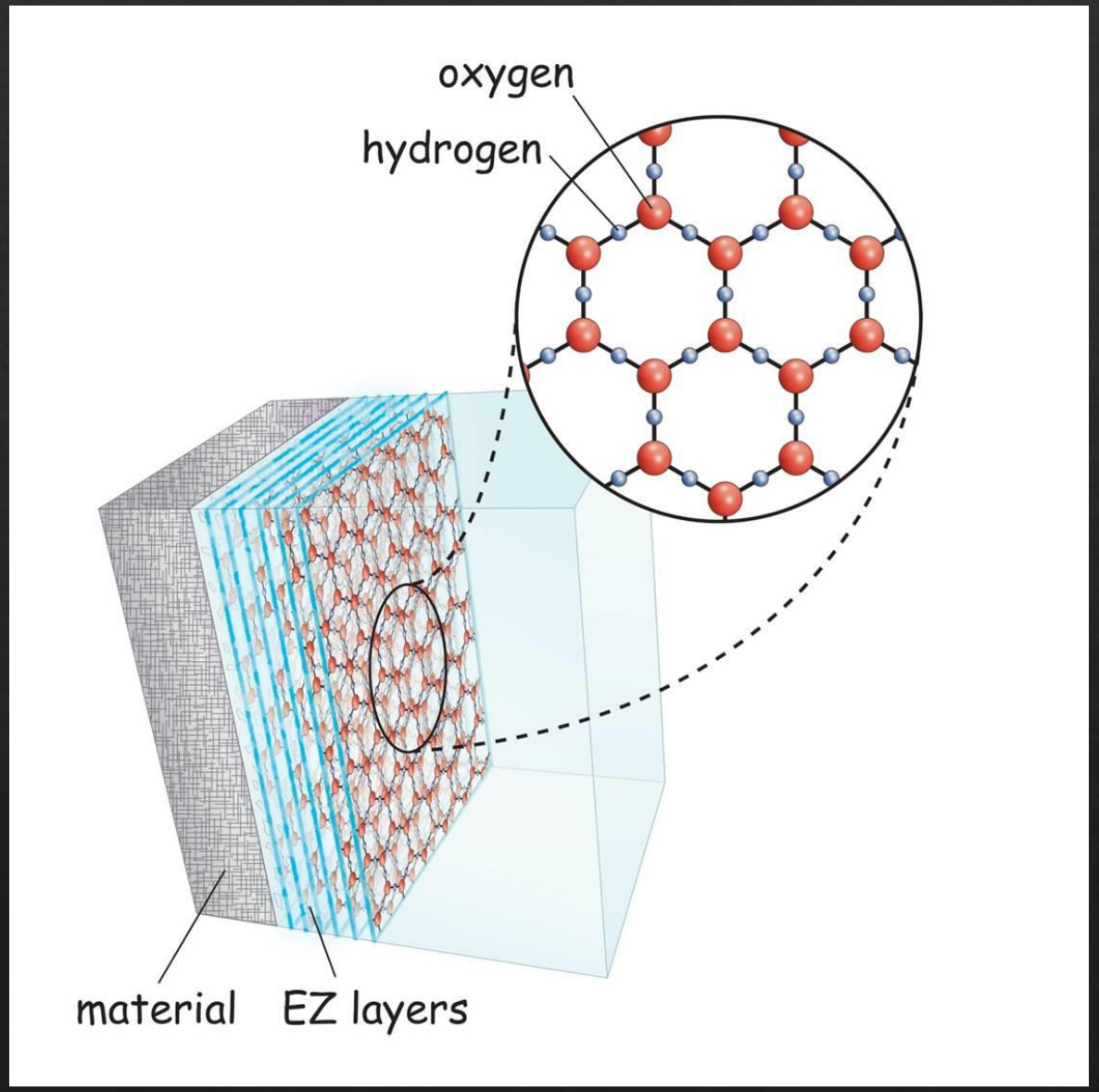






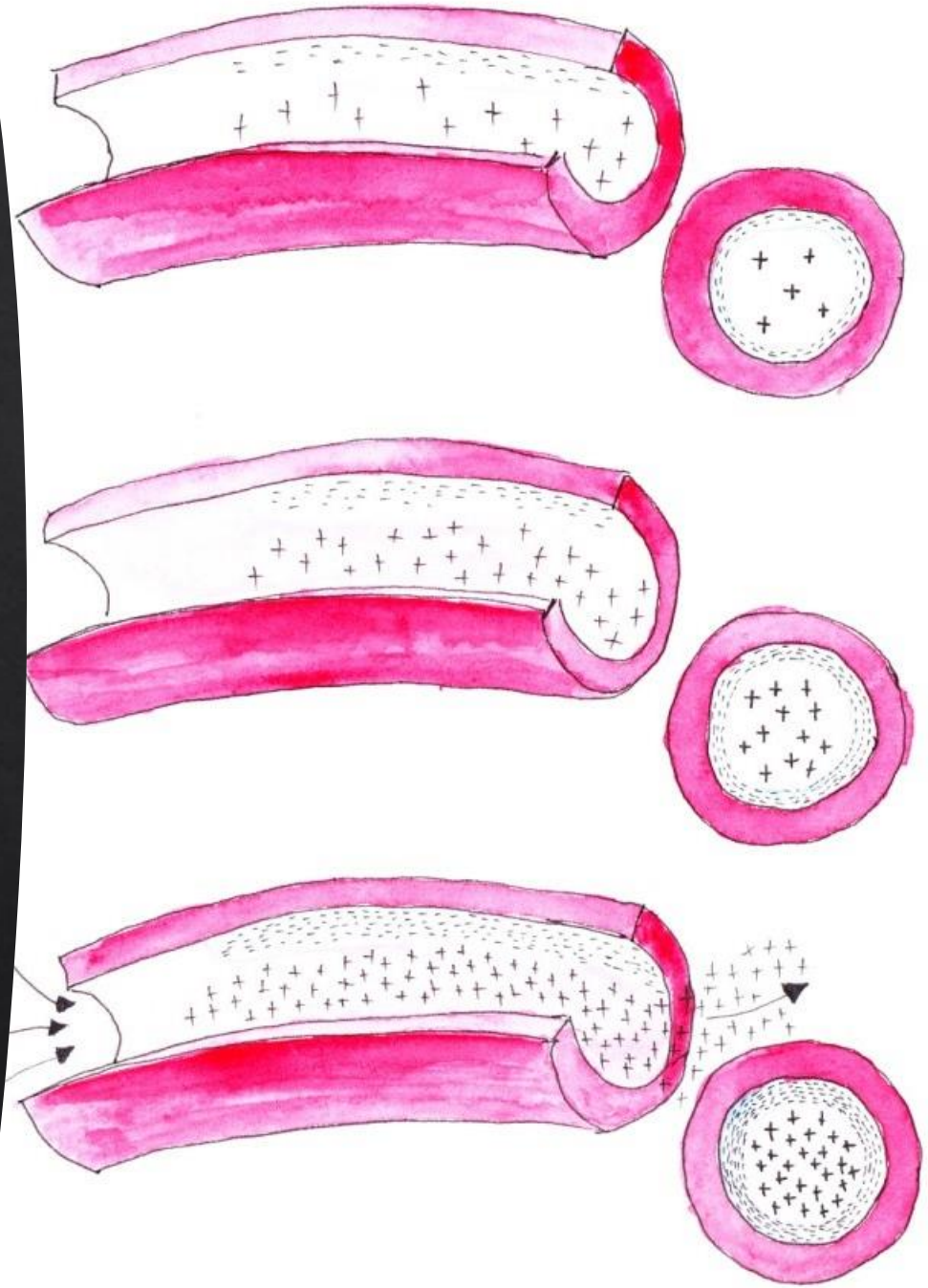
Exclusion Zone Water



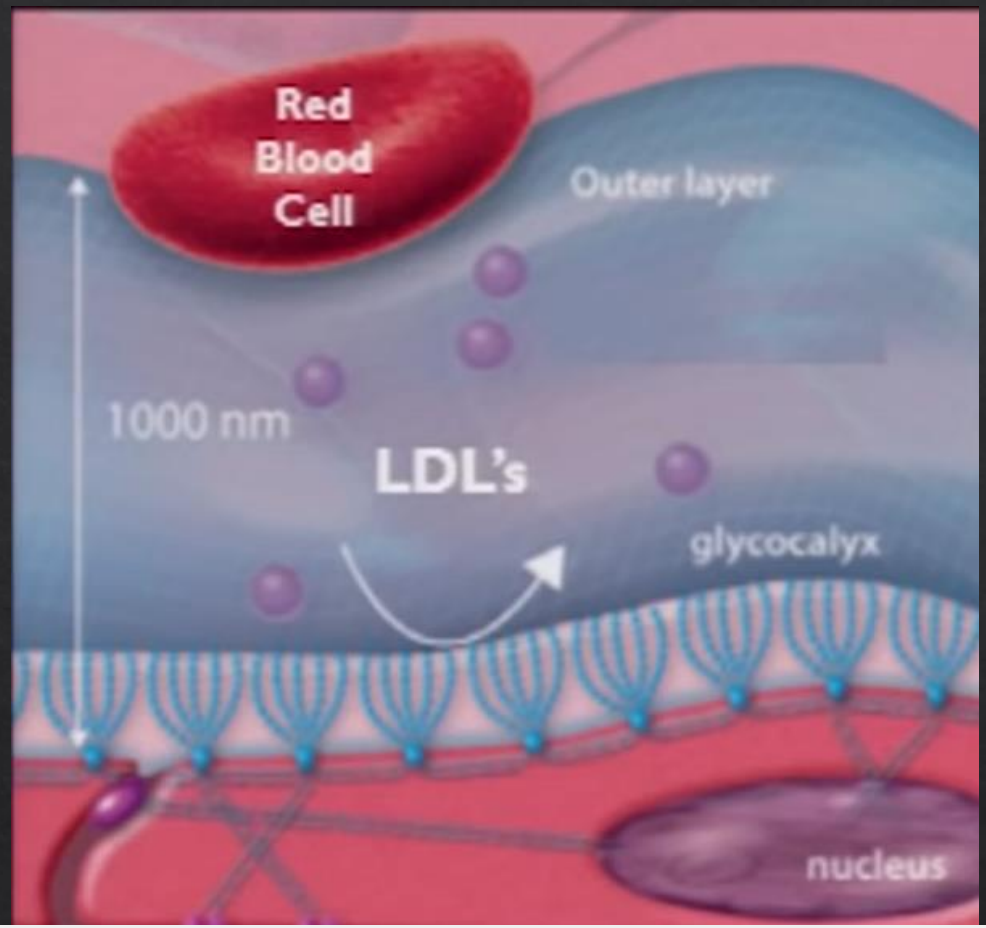


Pollack, G.H. (2013) The fourth phase of water: Beyond solid, liquid, and vapor. Seattle, WA. Ebner & sons.

- “We also saw exclusion zones next to natural biological surfaces; they included vascular endothelia, regions of plant roots, and muscle.”



Pollack, G.H. (2013) The fourth phase of water: Beyond solid, liquid, and vapor. Seattle, WA. Ebner & sons.



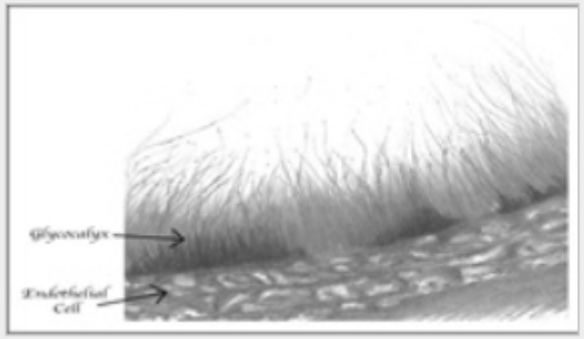
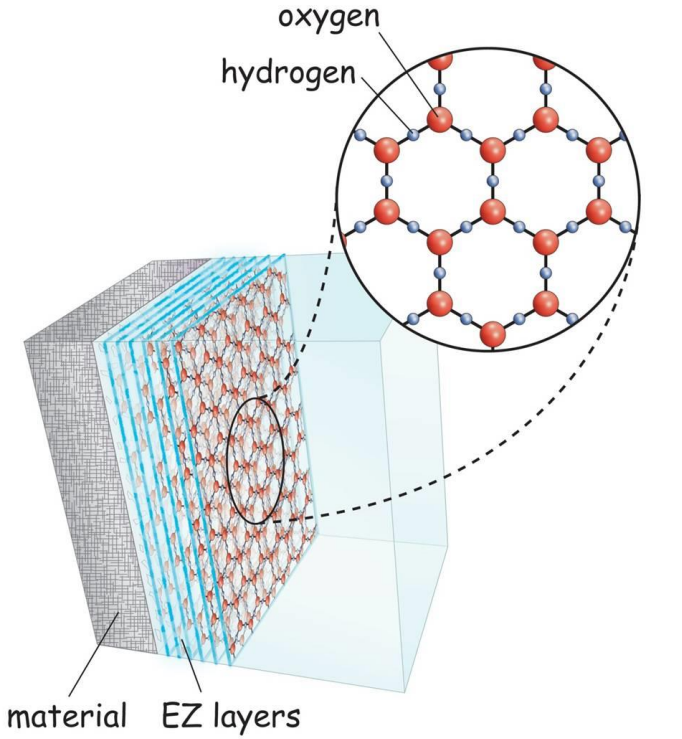
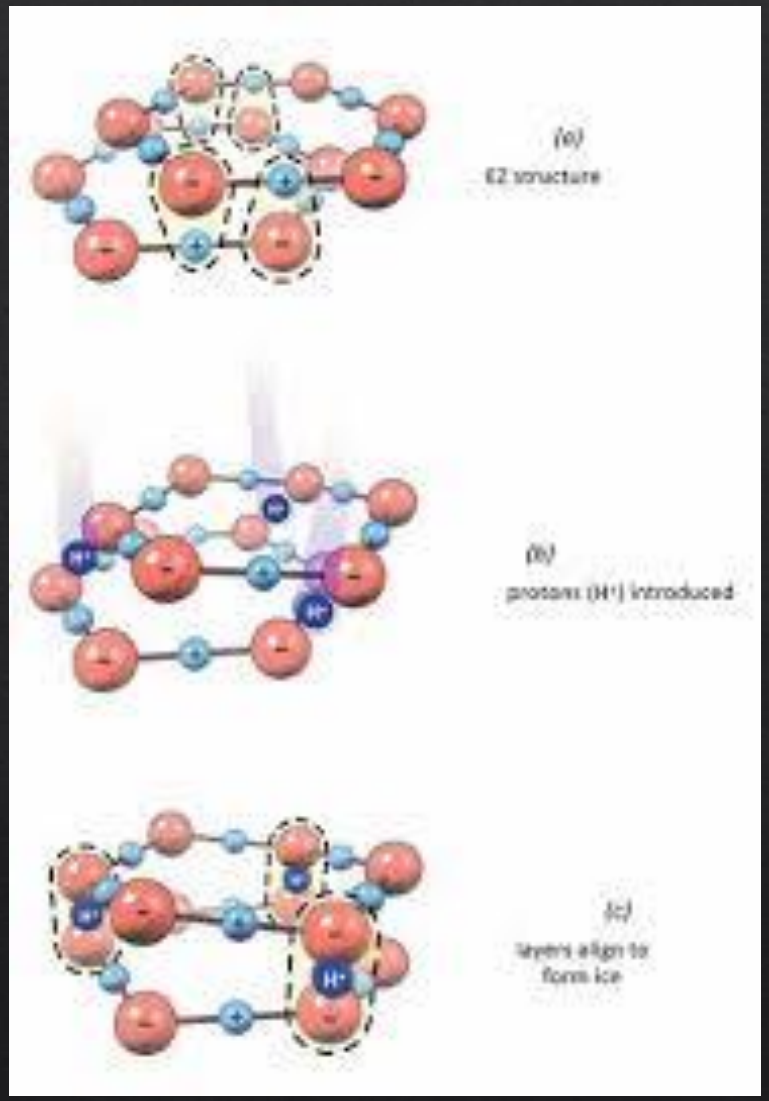


FIGURE 2: The glycocalyx. This graphic shows the structure of the glycocalyx, which protrudes from endothelial cells in all blood vessels and creates a protective and anticoagulant 'gel' layer. It is constructed from combined molecules of glucose and various proteins.

-Nieuwdorp, M., Meuwese, M. C., Mooij, H. L., Ince, C., Broekhuizen, L. N., Kastelein, J. J., … Vink, H. (2008). Measuring endothelial glycocalyx dimensions in humans: a potential novel tool to monitor vascular vulnerability. *Journal of Applied Physiology*, *104*(3), 845-852. doi:10.1152/japplphysiol.00440.2007

Exclusion Zone Water





- "Even red blood cells, several strains of bacteria, and ordinary dirt particles scraped from outside our laboratory were excluded. The protein albumin was excluded."

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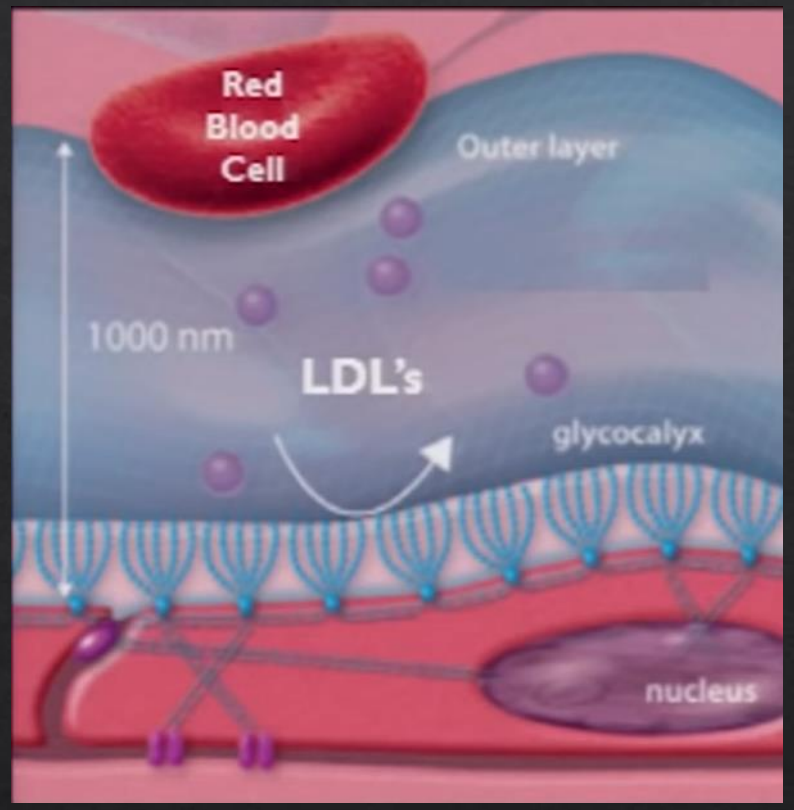
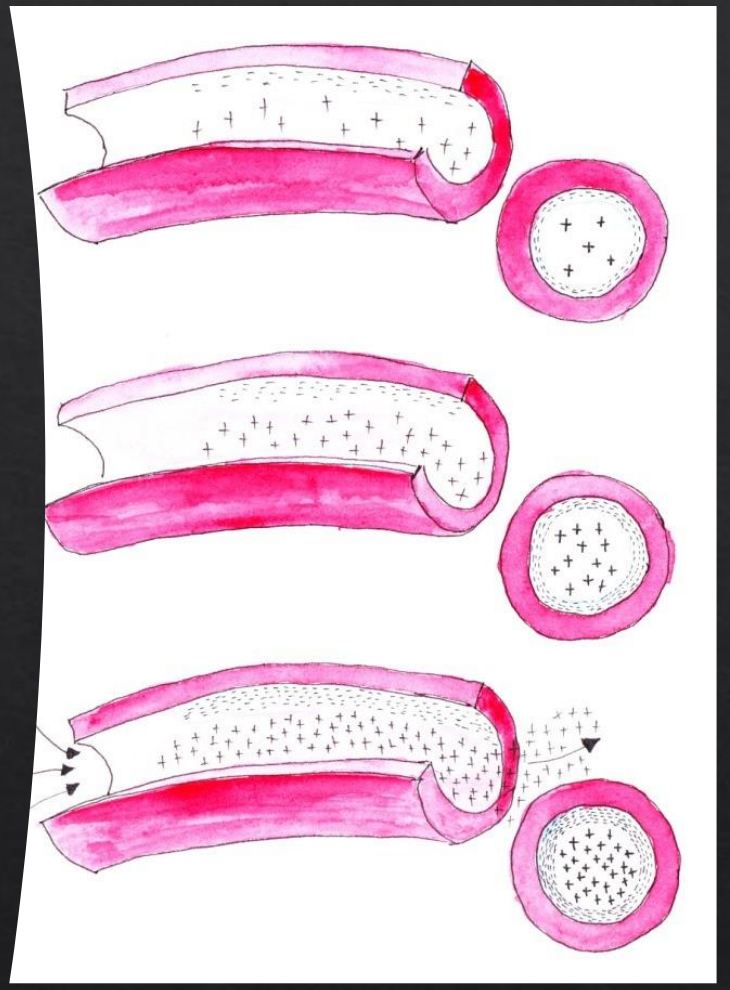
Particle Sizes

- Albumin – 3.8 nm in diameter
- RBC – 6000-8000 nm
- LDL – 24-28 nm
- HDL – 7-12 nm
- Sodium Ion – 0.273 nm
- Potassium Ion – 0.25 nm
- Nitrate Ion – 0.115 nm

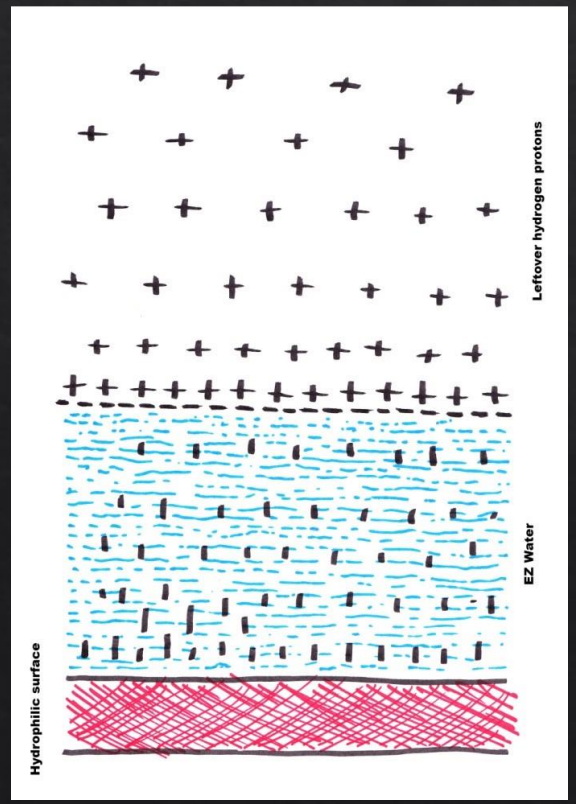


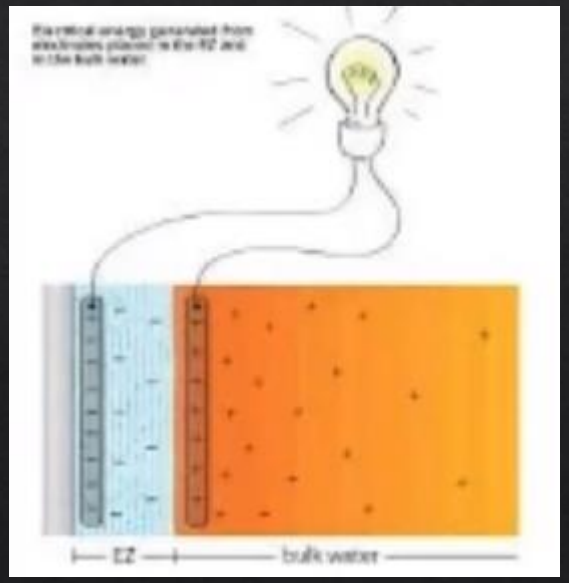


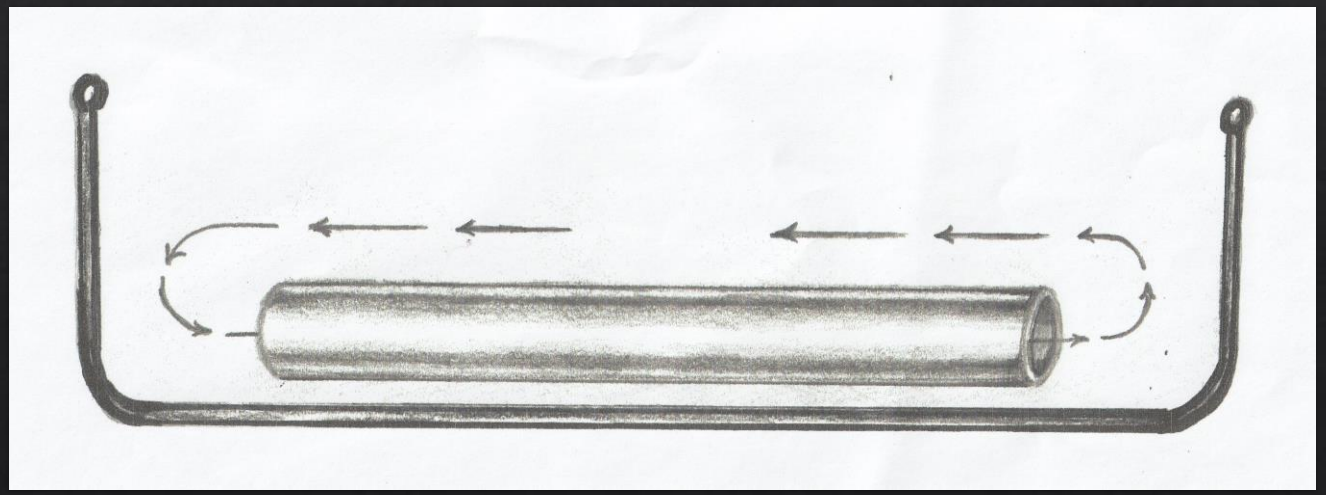
Hofmeister Series - $Mg^{2+} > Ca^{2+} > Na^{+} > K^{+} > Cl^{-} > NO_3^{-}$

-Tojo, A., & Kinugasa, S. (2012). Mechanisms of Glomerular Albumin Filtration and Tubular Reabsorption. *International Journal of Nephrology*, *2012*, 1-9. doi:10.1155/2012/481520
-Mark Winter, University of Sheffield and WebElements Ltd. (n.d.). WebElements Periodic Table » Potassium » radii of atoms and ions. Retrieved from https://www.webelements.com/potassium/atom_sizes.html
-Mark Winter, University of Sheffield and WebElements Ltd. (n.d.). WebElements Periodic Table » Sodium » radii of atoms and ions. Retrieved from https://www.webelements.com/sodium/atom_sizes.html
-German, J. B., Smilowitz, J. T., & Zivkovic, A. M. (2006). Lipoproteins: When size really matters. *Current Opinion in Colloid & Interface Science*, *11*(2-3), 171-183. doi:10.1016/j.cocis.2005.11.006

"Flow of this nature could persist indefinitely if protons and water were continually replenished. If EZs are involved, then proton replenishment is natural, for EZs generate protons continuously so long as an ambient energy remains available to drive their release. The protons immediately form hydronium ions. Those charge water molecules will then move toward regions of lower charge. Hence, *sustained water flow occurs inevitably in almost any scenario involving EZ's and radiant energy*."







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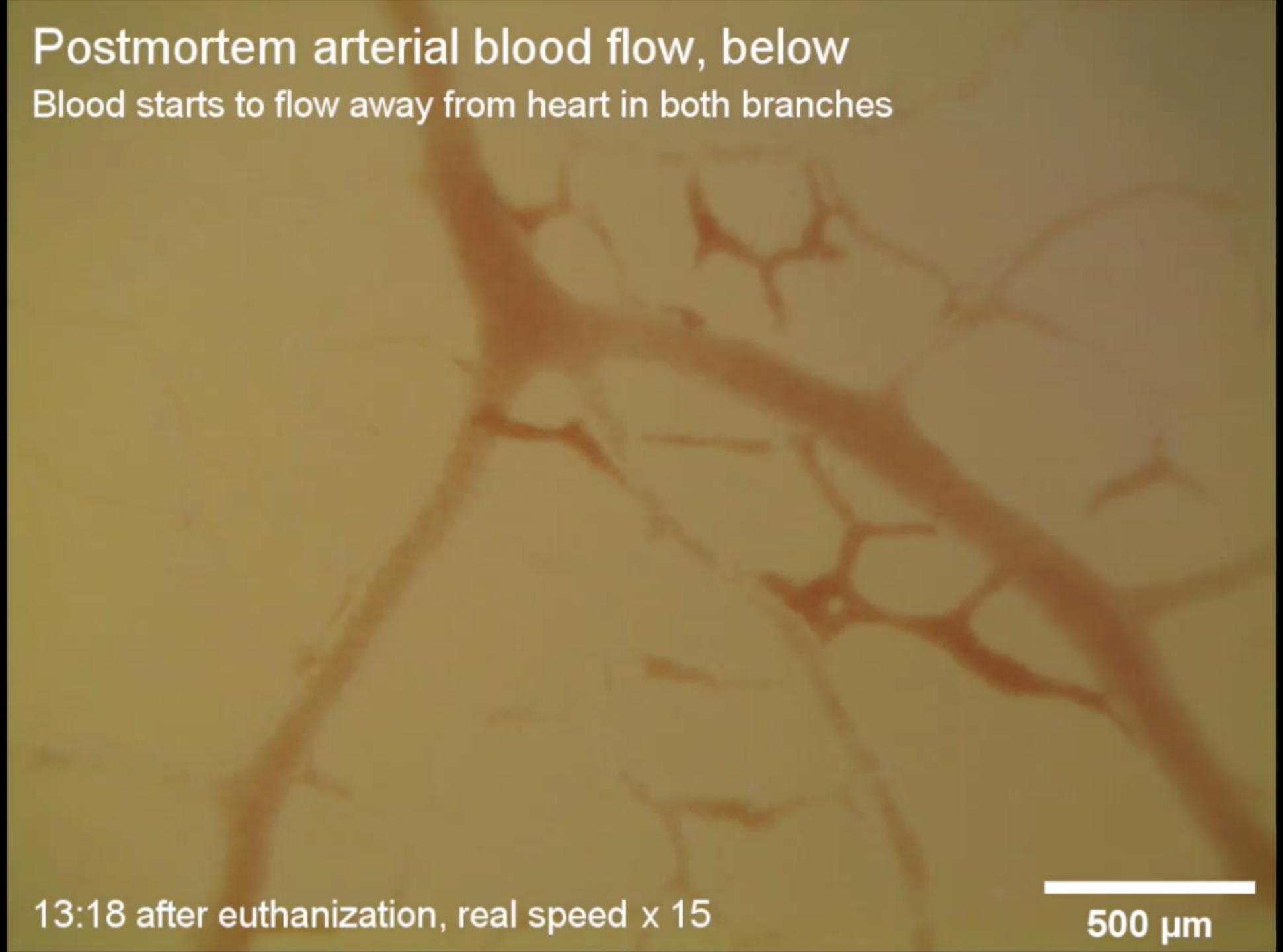
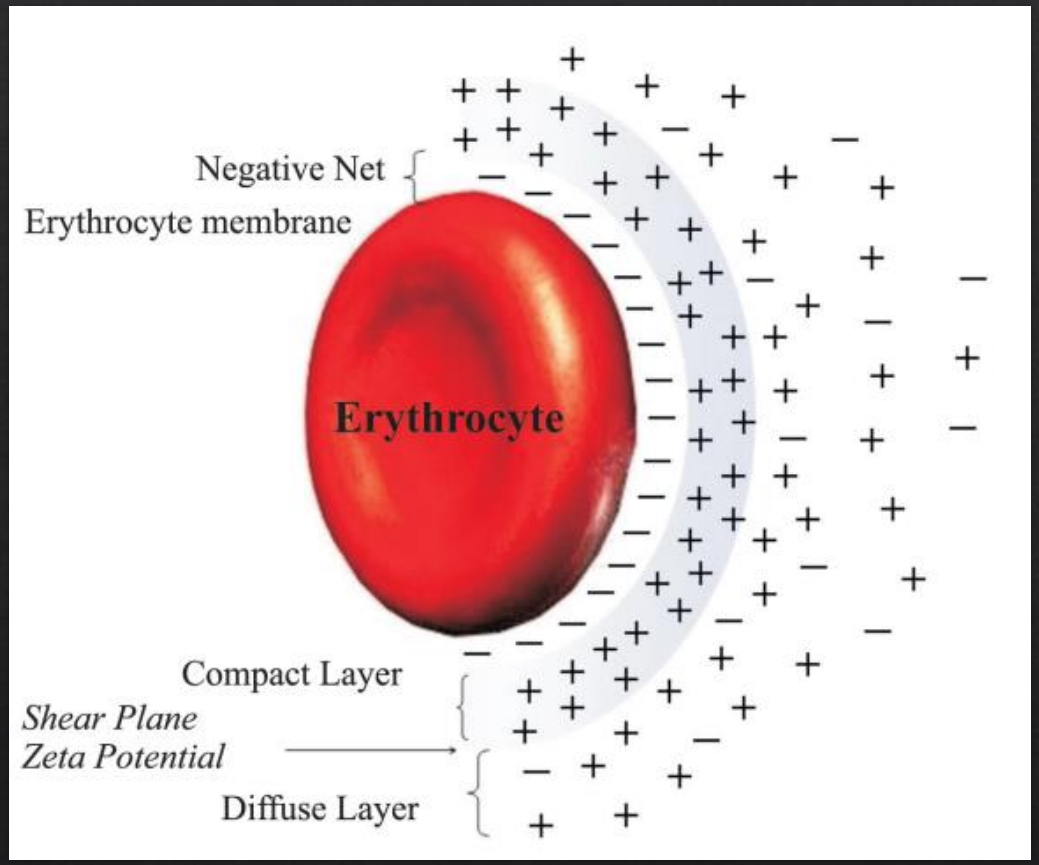
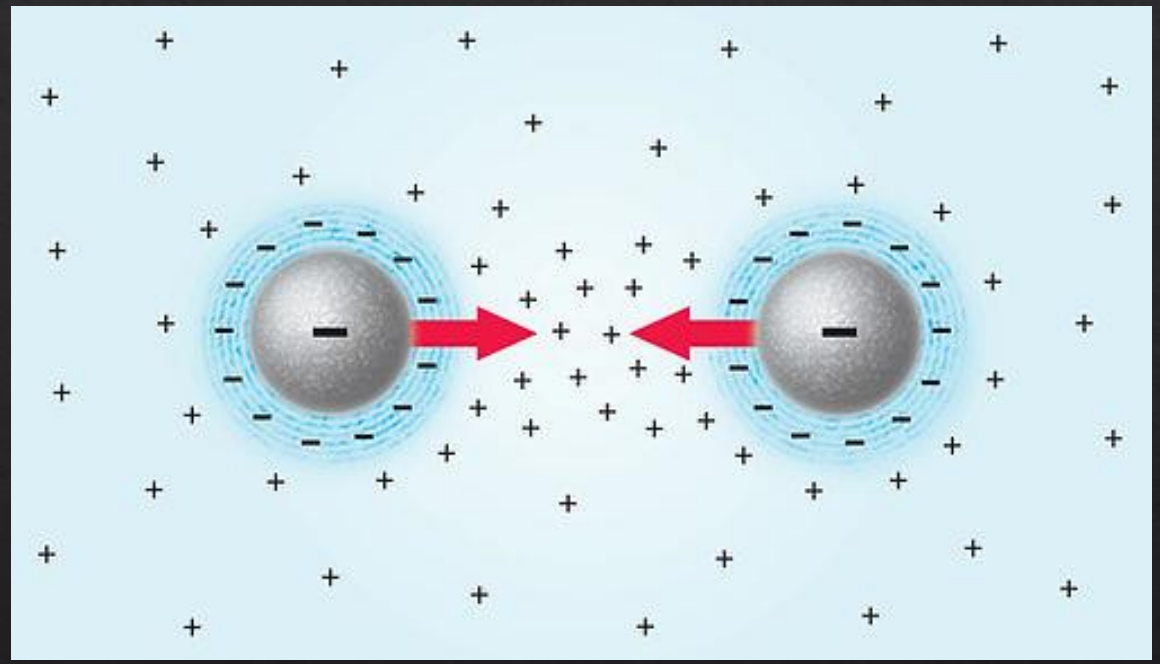

Postmortem arterial blood flow, below
Blood starts to flow away from heart in both branches
13:18 after euthanization, real speed x 15
500 µm

Zeta Potential – Electrostatic Properties





-Fernandes, H. P., Cesar, C. L., & Barjas-Castro, M. D. (2011). Electrical properties of the red blood cell membrane and immunohematological investigation. *Revista Brasileira de Hematologia e Hemoterapia*, *33*(4), 297-301. https://doi.org/10.5581/1516-8484.20110080

Human serum lipoprotein zeta potential measurement by zetasizer instrument, a method development

Z. Varshosaz[1], S. Abdi[2], E. Moazen[1], A. Emami Razavi[3,*]

[1]Department of Pharmaceutics, Isfahan Pharmaceutical Sciences Research Center, School of Pharmacy and Pharmaceutical Sciences, Isfahan University of Medical Sciences, Isfahan, Iran
[2]Plasma Physics Research Center, Tehran Sciences and Research Branch, Islamic Azad University, Tehran, Iran
[3]Department of Clinical Biochemistry, Isfahan Pharmaceutical Sciences Research Center, School of Pharmacy and Pharmaceutical Sciences, Isfahan University of Medical Sciences, Isfahan, Iran

Background and Aims: Serum lipoproteins play a central role in transporting hydrophobic molecules through the bloodstream and between specific tissues. Lipoprotein molecules have a distinctive electrical charge and changes in electrostatic properties directly affect the metabolism of the lipoprotein. Zeta potential has an important role in lipoproteins structure and their interaction with apolipoproteins and enzymes. So determination of lipoproteins zeta potential can help to better understanding of pathogenesis and prognosis of lipid metabolism related diseases. There are some methods such as agarose gel electrophoresis and spin-probe potential, but these methods are complicated and not qu variable in different articles. The aim of this study is to measure lipoprotein zeta potential by zetasizer.

Quantitative measurement of lipoprotein surface charge by agarose gel electrophoresis.

DL Sparks, MC Phillips

A method development for serum lipoprotein zeta potential measurement by zetasizer instrument

Amirnader Emami Razavi [1*], Soheila Abdi [2], Jhale Varshosas [3], Elahe Moazen [3], Sahar Emami Razavi [4], Arash Abdi [5]

1- Isfahan University of Medical Sciences,. 2- Tehran Sciences and Research Branch, Islamic Azad University,. 3- Isfahan, Iran., 4- School of Medicine, Tehran Azad University of Medical Sciences,. 5- Varamin Pishva Azad University,.
razavinader@gmail.com, abdi.soheila@gmail.com

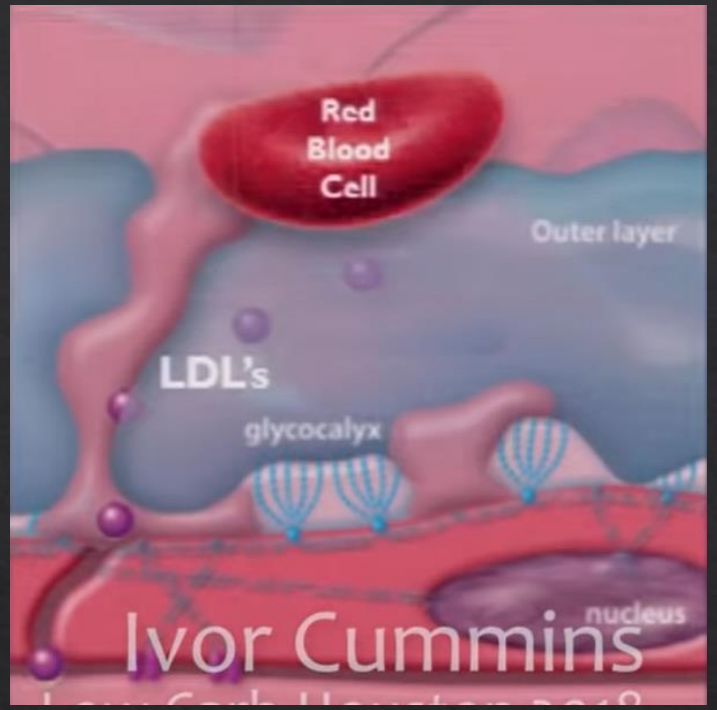
Serum lipoproteins play a central role in transporting hydrophobic molecules through the bloodstream and between specific tissues. Lipoprotein molecules have a distinctive electrical charge and changes in electrostatic properties directly affect the metabolism of the lipoprotein. Considering the vital role of zeta potential in lipoproteins structure, their interaction with apolipoproteins and enzymes and finally in plasma lipid metabolism and with regard to the changes in lipoprotein zeta potential in different physiological and pathological conditions, determination of lipoproteins zeta potential can help to better understanding of pathogenesis and prognosis of lipid metabolism related diseases. There are some methods such as agarose gel electrophoresis and spin-probe technique to evaluate the lipoprotein zeta potential, but these methods are complicated and not quiet reliable and

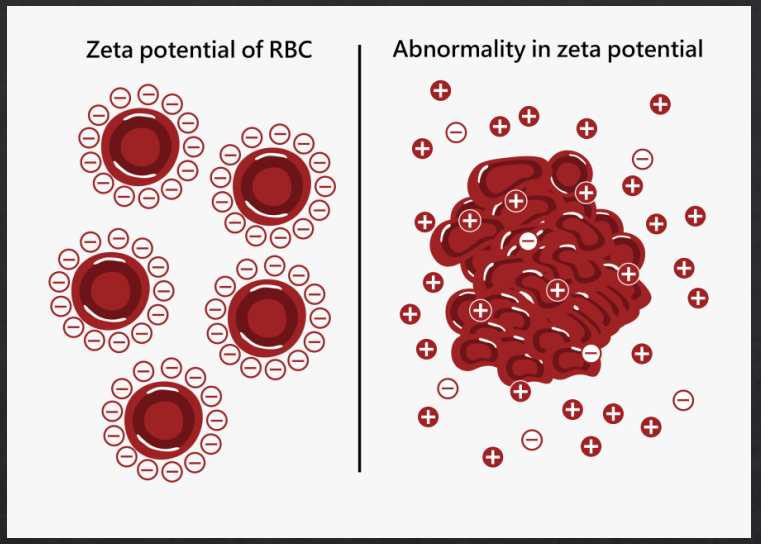
Virchow’s Triad and Exclusion Zone Water

- EZ water protects the artery from damage
- EZ water prevents hemodynamic changes by keeping blood flowing
- EZ water prevents hypercoagulability by creating Zeta potential on blood elements

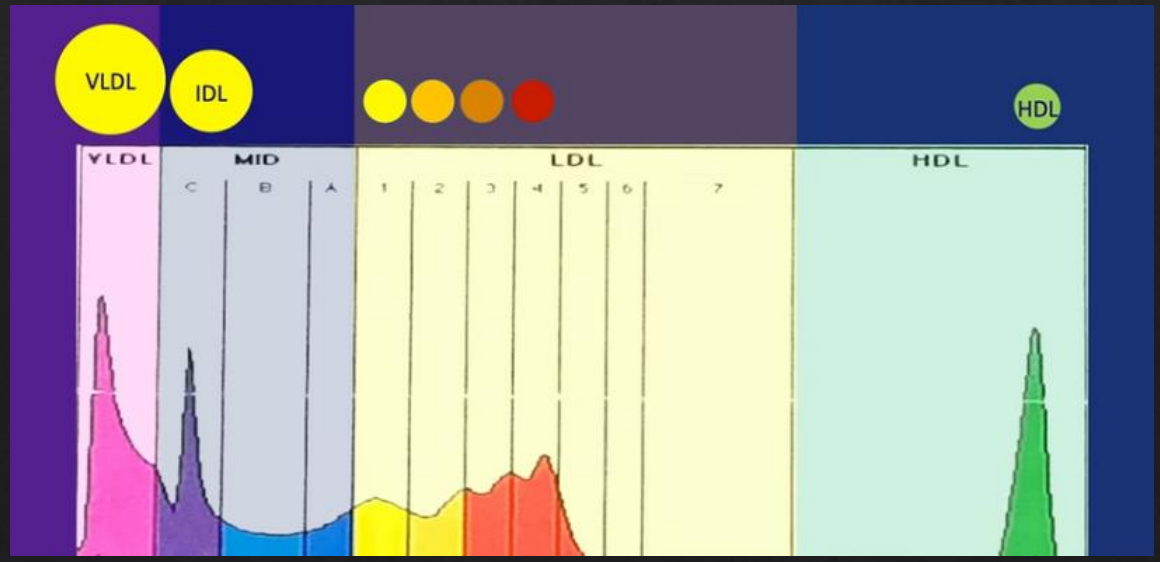
EZ breakdown

- "Suppose some electron-hungry process draws off some of the EZ's negative charge, leaving the released lattice unit devoid of it's usual negativity……Issues of this nature could upset the default situation."





"Electron-hungry process"
-Oxidative Stress
-Inflammation
-Low body charge



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Two steps:

1) Do things that build EZ water in the body.

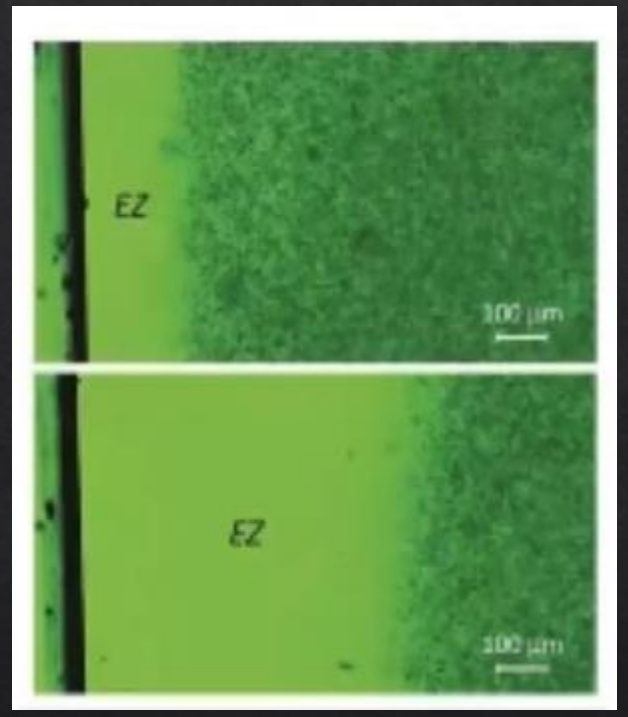
2) Avoid things that damage EZ water and endothelia that leave the vascular system vulnerable to clotting.

Avoid Sources of Damage to Endothelia

Glucose Based Metabolism	Oxidized Fats	Heavy Metals	"Infectious" Illness
Fluctuating Blood Sugars	Endotoxemia	Smoking/Air Pollution	Decreased Endothelial Progenitor Cells
Advanced Glycation End-Products	Psychological Stress	Bisphenol-A	Insulin Resistance

Building EZ

- "Ultraviolet was least effective, visible light more effective, and infrared the most effective, particularly at 3000 nm…..Later we realized that the 3000 nm wavelength is the one most strongly absorbed by water."



40-50% of the sun's rays are infrared

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Create EZ Water

- Good water (spring water, glacial melt, vortexed water, no toxins in water)
- Avoid toxins (glyphosate, plastics, heavy metals, etc.) – (Abha, S., et al. 2018)
- Avoid nnEMF's (reduce EZ 15-20%) – (Lee, J.W., et al. 2021, Abdi, S., et al. 2016)
- Optimize Circadian Rhythm (sync body to day/night cycle, lipid metabolism. leptin, melatonin, insulin resistance)
- Eat good fats (ghee, butter, lard, tallow, etc.)
- Grounding/earthing (increases Zeta potential and blood flow) – (Chevalier, G., et al. 2013, Chevalier, G., et al. 2015)
- Infrared light exposure (infrared sauna, sunrise, sunset) – (Imamura, M., et al. 2001)
- Exercise (especially to the point of creating heat)
- Cold exposure (increase structured water production in mitochondria)
- Positive loving relationships/express gratitude – (Radin, D., et al. 2006)

-Diet, exercise, stress all stayed about the same
-Blood thinner for 6 months

Lipids
TC – 292, LDL – 242
TC – 280, LDL – 222
TC – 390, LDL – 318
TC – 515, LDL – 452

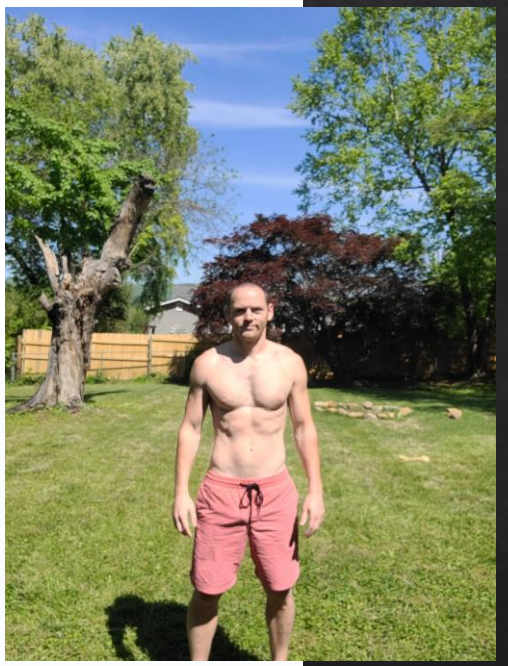
Impressions

Right: Triphasic flow is noted in the common femoral, superficial femoral, popliteal and biphasic in the posterior tibial, peroneal and dorsalis pedis arteries. Elevated velocities of 211 cm/sec.(preceding of 114 cm/sec.), are noted in the mid superficial femoral level with a ratio of 1.8, which is suggestive of 0-49% stenosis. Elevated velocities of 256 are noted at the distal superficial femoral level. The ankle/brachial index is within normal limits (0.9-1.0).

Sonographer: Sowers, Dorise RVT, RTR
Electronically signed on 4/26/2022 10:17:44 AM by Callis, James MD .

Patient Name: STEPHEN BRYANT HUSSEY
Date of Exam: 4/12/2021
MPI: 3766255
MRN: 1112699
Date of Birth: 9/25/1986
Gender: M
Height: 68 in
Weight: 77.1 kg
BSA: 1.9 mï¿½
Blood Pressure: 109/59 mmHg

Facility: Carilion Roanoke Memorial Hospital
IAC Accredited Lab
Procedure: 2D Echo/Doppler/Color Doppler
Indication: Pre-Op
Sonographer: Isabel Edwards RDCS, BS
Referring Provider: R. Barksdale, MD



Summary
1. Overall left ventricular ejection fraction is estimated at 50 to 55%.
2. Low-normal global left ventricular systolic function.
3. Mid and apical inferior septum is abnormal as described in the body of the report.
4. GPLS -19.9% suggesting normal LV fuction.
5. When compared to 1/6/21, LV systolic function has improved.

Left Ventricle:
Overall left ventricular ejection fraction is estimated at 50 to 55%. The left ventricular internal cavity size was normal. LV septal wall thickness was normal. LV posterior wall thickness is normal. Global LV systolic function was low-normal. Tissue Doppler indicates an equivocal left ventricular filling pressure.

LV Wall Scoring:
The mid and apical inferior septum is mildly hypokinetic.

UNILATERAL EXAM-RIGHT
Pt. Name: STEPHEN BRYANT HUSSEY
PT. MPI: 3766255
Pt. MRN: 7793003
DOB: 9/25/1986
Sex: M
Date of Exam: 5/23/2023
Technologist: Dorise Sowers RVT
Referring Physician: 129965 Colin T Brandt MD
Accession Number: 117142866
Facility: Carilion Clinic Vascular Surgery-Starkey Road
IAC Accredited Lab

The technician told me the scan was essentially normal.

Impression:
1. No hemodynamically significant arterial disease seen in the right lower extremity.
2. Slightly elevated velocities are noted at the distal superficial femoral level.
3. The right ABI is within normal range.
4. The left ABI is within normal range.

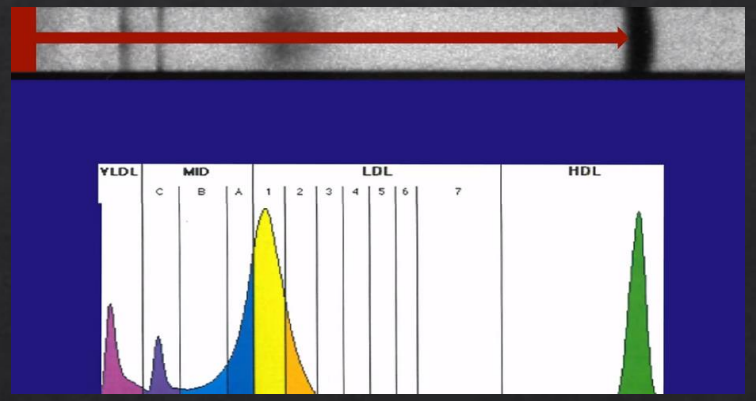
ApoB/ApoA1

Particle Count

LIPID PROFILE

	DESIRABLE	BORDERLINE	HIGH RISK
Cholesterol	<200 mg/dl	200-239 mg/dl	240 mg/dl
Triglycerides	<150 mg/dl	150-199 mg/dl	200-499 mg/dl
HDL cholesterol	60 mg/dl	35-45 mg/dl	<35 mg/dl
LDL cholesterol	60-130 mg/dl	130-159 mg/dl	160-189 mg/dl
Cholesterol/ HDL ratio	4.0	5.0	6.0

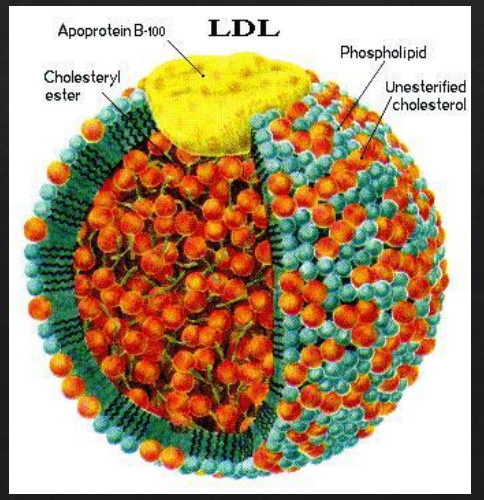
Lipid Panel



LDL vs. HDL

Triglycerides

Particle size



ApoB

Non-HDL/ApoB

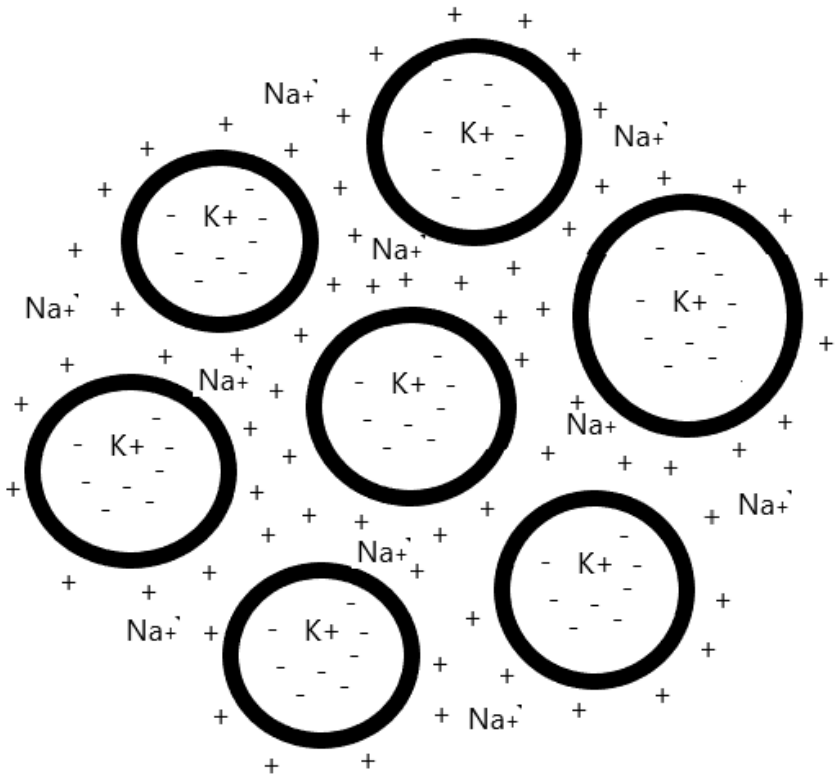
Lp(a)

oxLDL

Covid Injection Adverse Reactions

Structured Water in Cells

Hofmeister Series - $Mg^{2+} > Ca^{2+} > Na^{+} > K^{+} > Cl^{-} > NO_3^{-}$



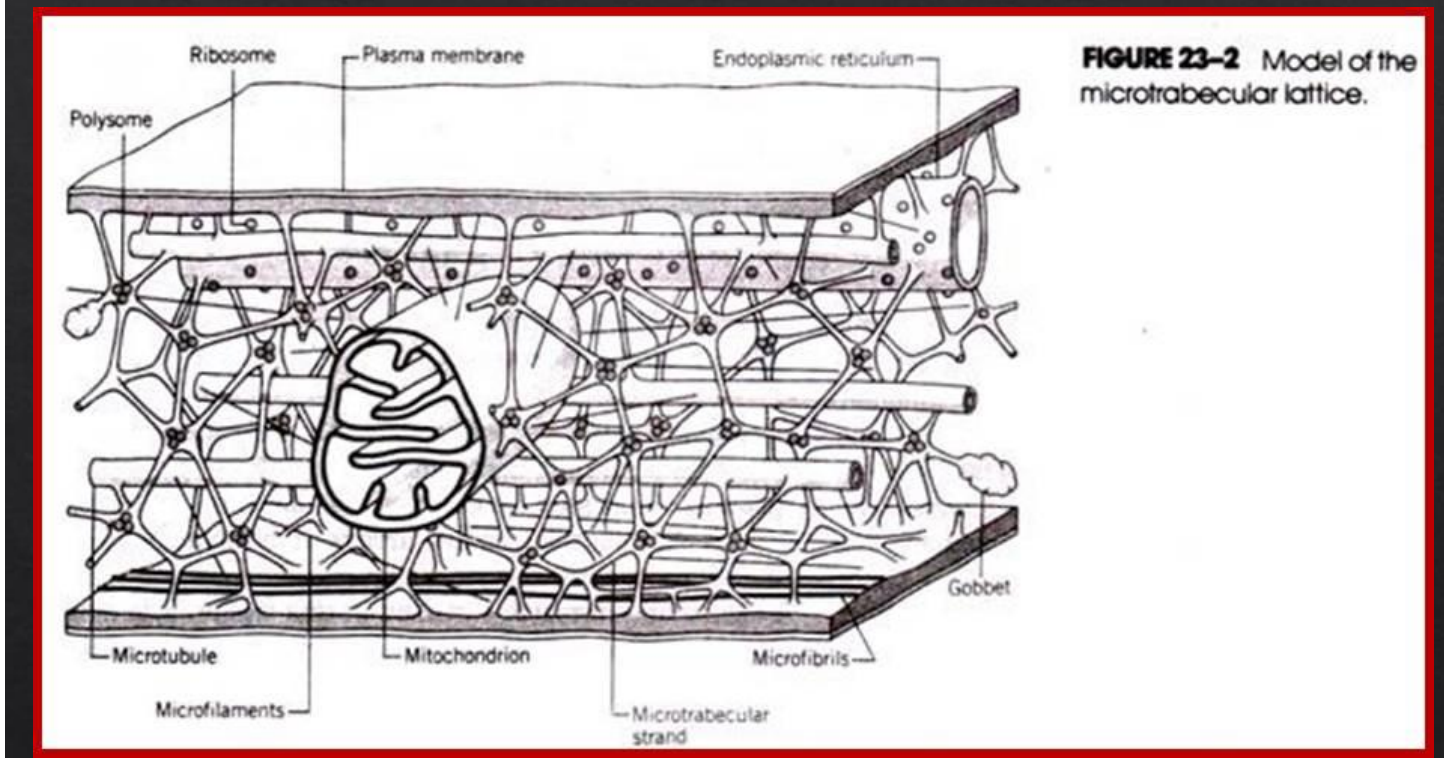
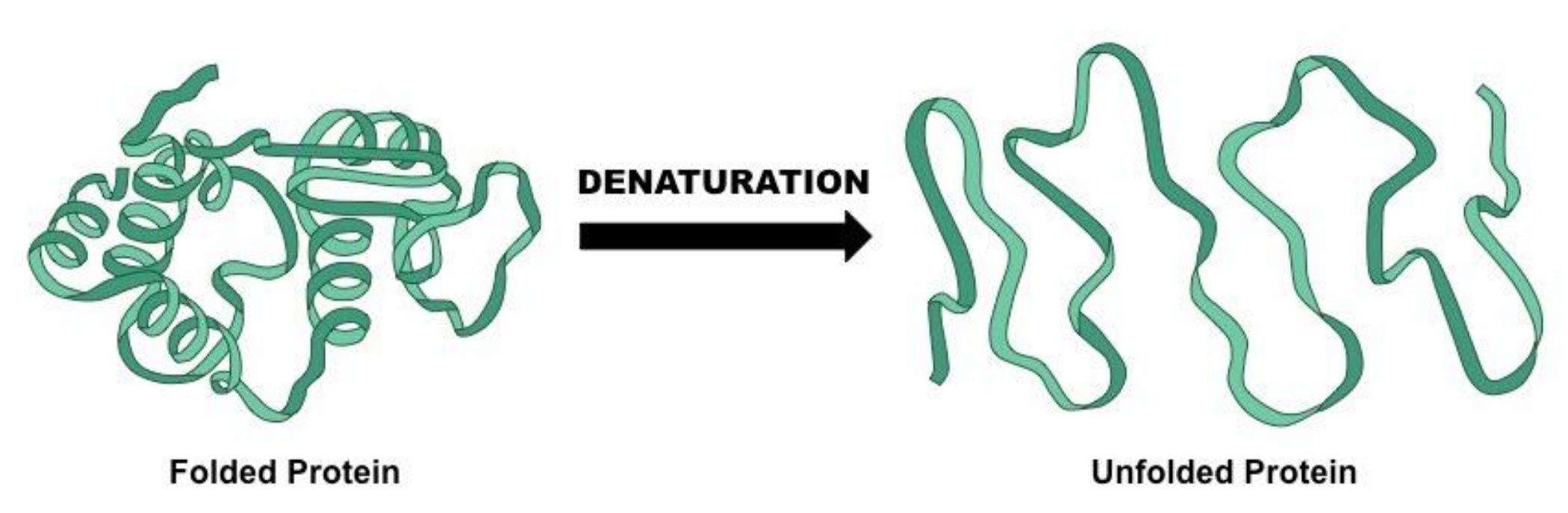


FIGURE 23–2 Model of the microtrabecular lattice.

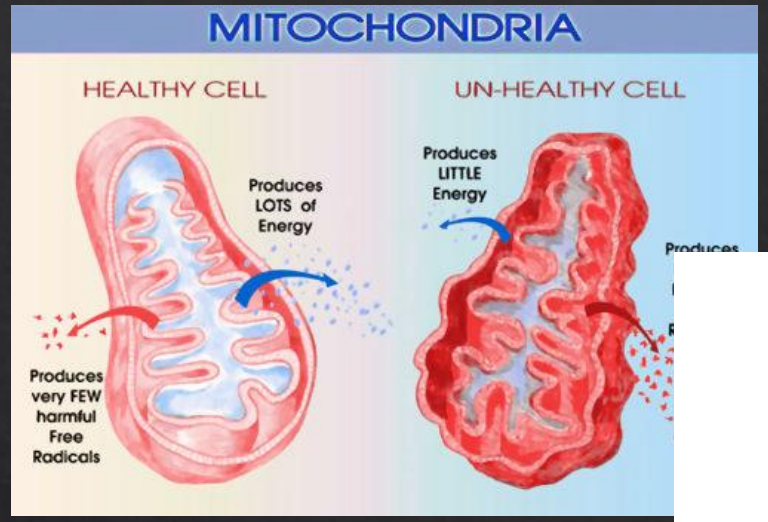
-Gershon, N. D., Porter, K. R., & Trus, B. L. (1985). The cytoplasmic matrix: its volume and surface area and the diffusion of molecules through it. Proceedings of the National Academy of Sciences, 82(15), 5030-5034. doi:10.1073/pnas.82.15.5030

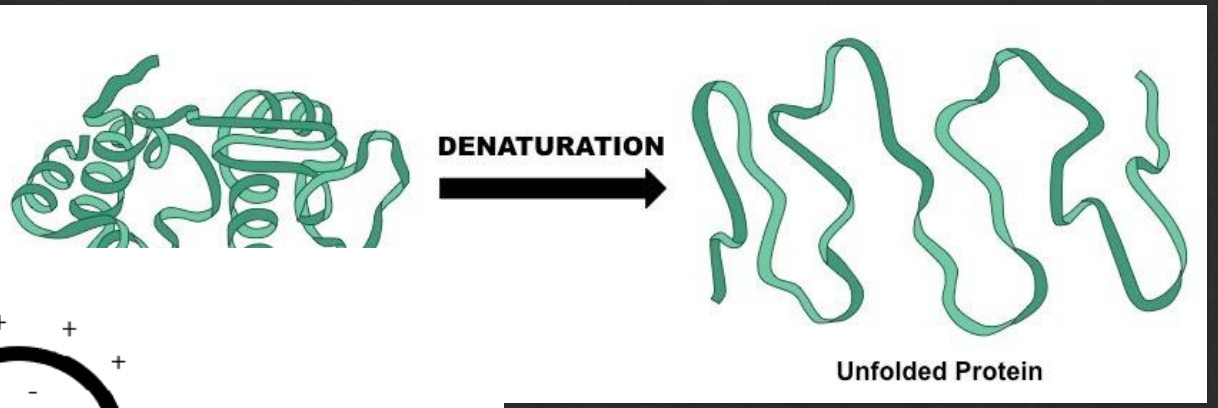
-Clegg, J. S. (2018). On the Internal Environment of Animal Cells. Microcompartmentation, 1-16. doi:10.1201/9781351074575-1

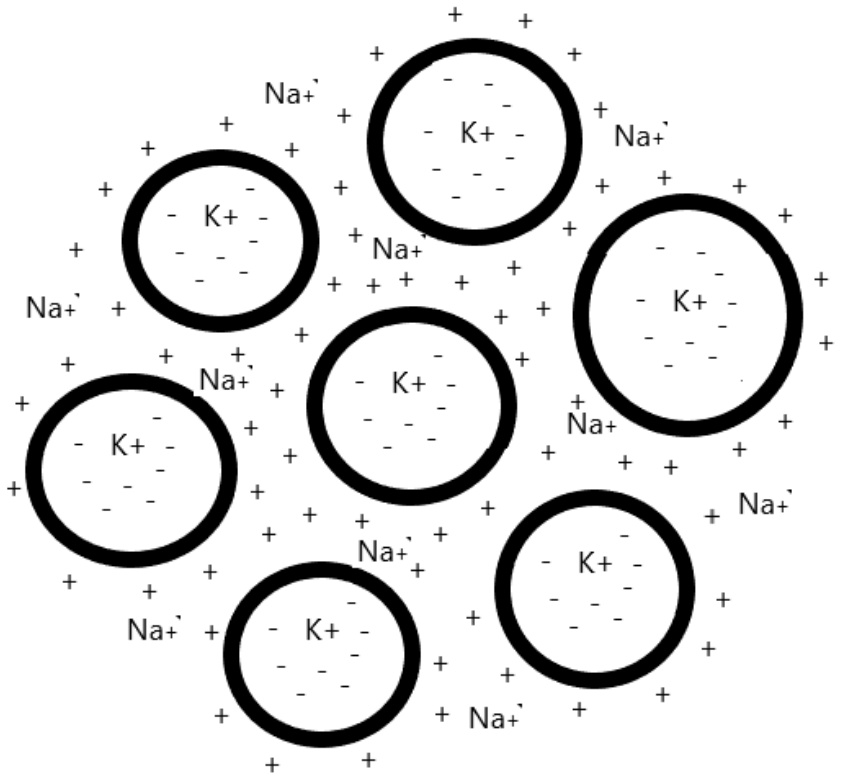
Maintaining unfolded proteins that form microtrabecular lattice (hydrophilic surface) requires lots of ATP

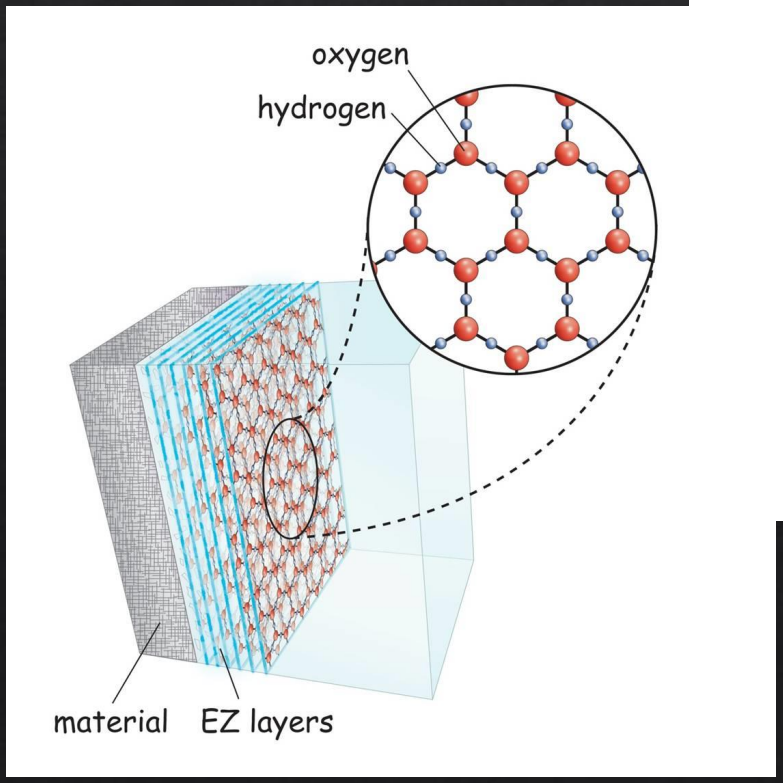


-López-Beltrán, E. A., Maté, M. J., & Cerdán, S. (1996). Dynamics and Environment of Mitochondrial Water as Detected by H NMR. Journal of Biological Chemistry, 271(18), 10648-10653. doi:10.1074/jbc.271.18.10648









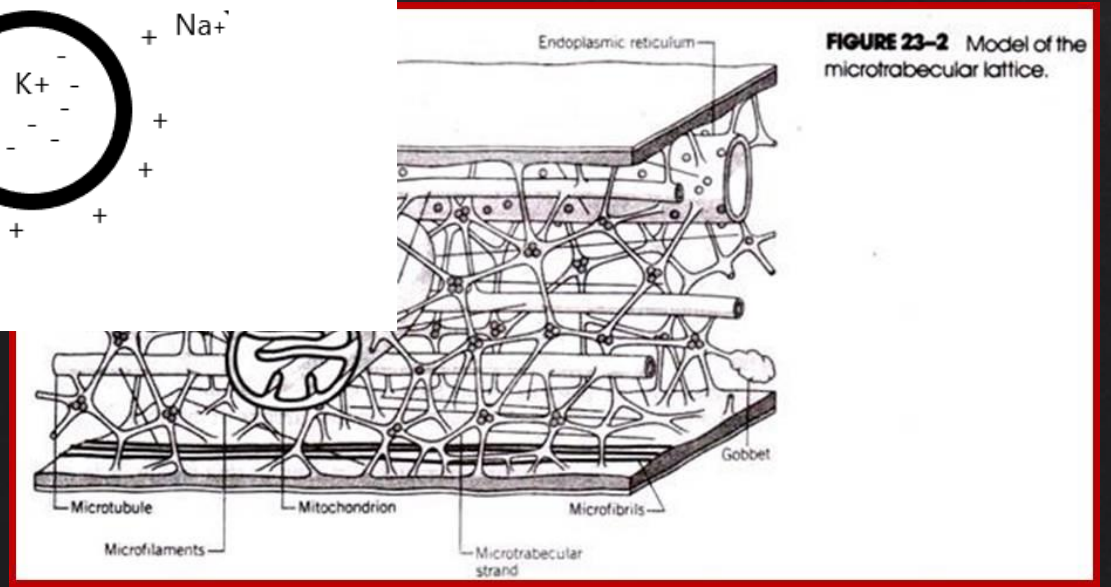


FIGURE 23–2 Model of the microtrabecular lattice.

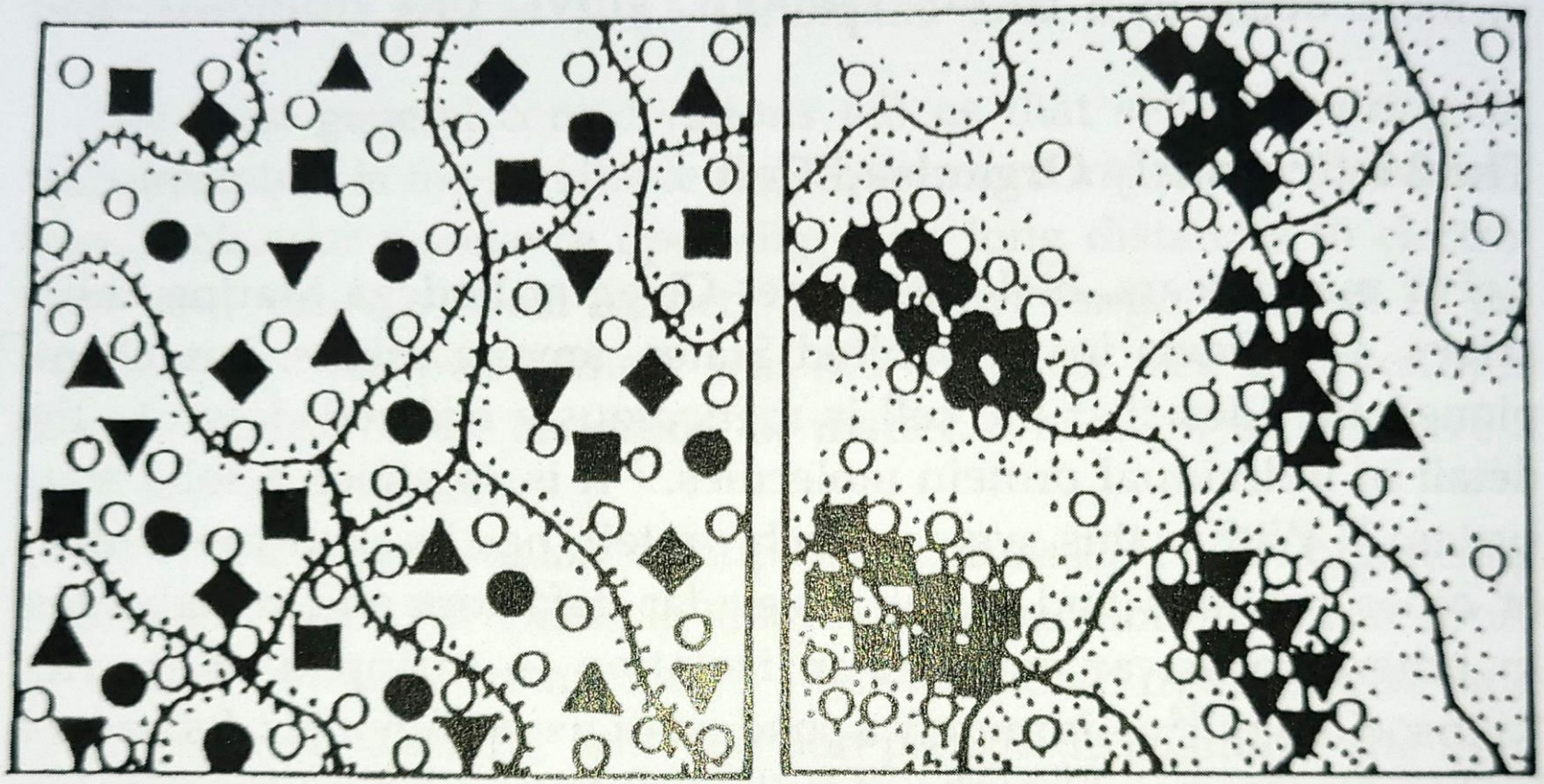


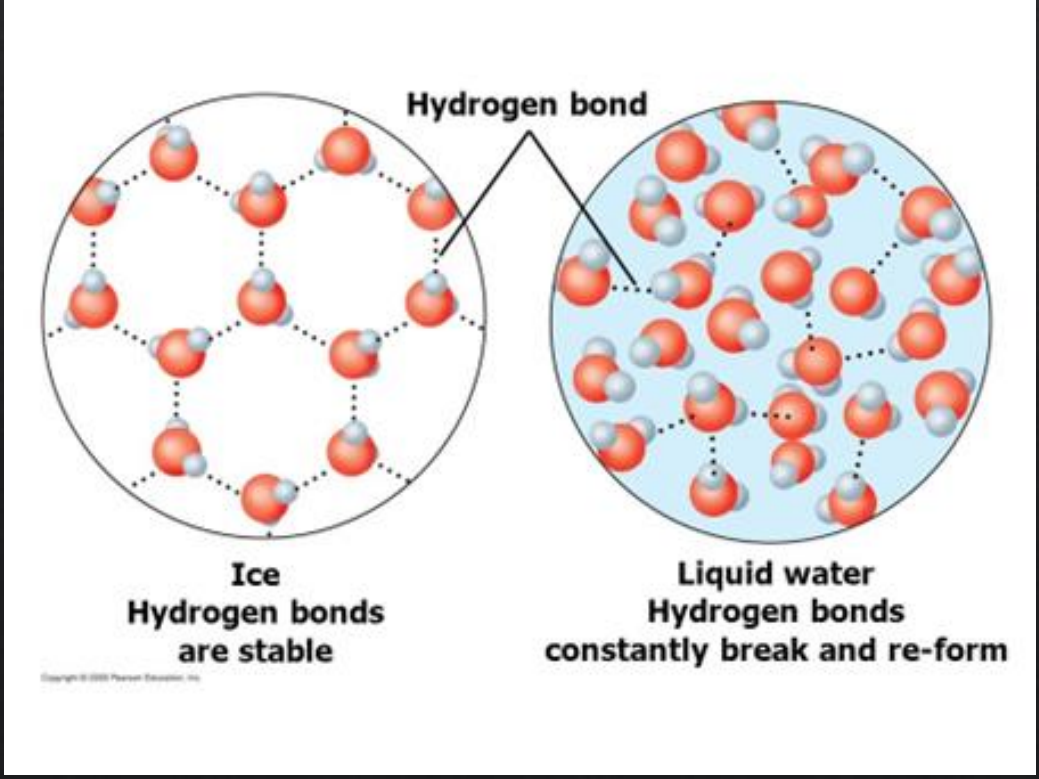
Figure 10.1 Diagrammatic representation of the soluble (left) versus solid state (right) description of the cytosol Wavy lines are cytoskeletal elements of the microtrabecular lattice (see text), dots are structured water molecules, open circles are metabolites and cofactors, and filled symbols are macromolecules.[15]

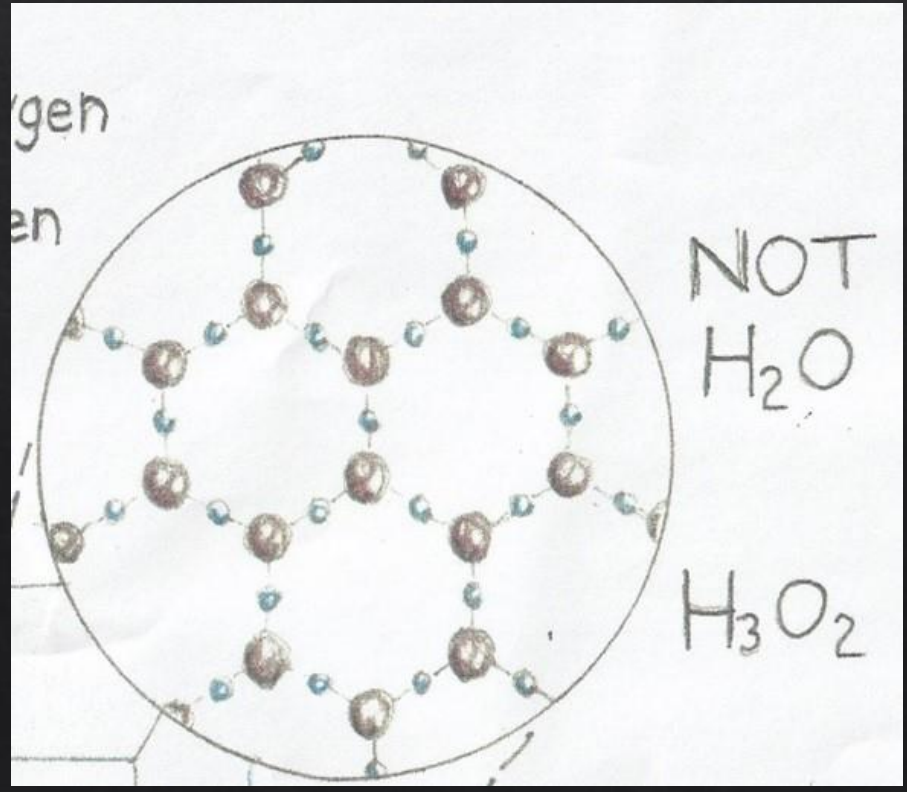
-Clegg, J. S. "Properties and metabolism of the aqueous cytoplasm and its boundaries." *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* 246, no. 2 (1984), R133-R151. doi:10.1152/ajpregu.1984.246.2.r133.

-Niinomi, Hiromasa, Tomoya Yamazaki, Hiroki Nada, Tetsuya Hama, Akira Kouchi, Junpei T. Okada, Jun Nozawa, Satoshi Uda, and Yuki Kimura. "High-Density Liquid Water at a Water–Ice Interface." *The Journal of Physical Chemistry Letters* 11, no. 16 (2020), 6779-6784. doi:10.1021/acs.jpclett.0c01907.

Characteristics of EZ Water:

1. Exclusion properties
2. Holds negative charge
3. Creates flow of fluid
4. Denser than water





Injection Ingredients

J Allergy Clin Immunol Pract. 2021 Dec; 9(12): 4470–4472.e1.
Published online 2021 Oct 6. doi: 10.1016/j.jaip.2021.09.039

PMCID: PMC8492825
PMID: 34626857

Tolerability of polysorbate 80–containing COVID-19 vaccines in confirmed polyethylene glycol–allergic patients

Toon Ieven, MD,[a,b,*] Thomas Van Weyenbergh, MD,[a,*] Martijn Vandebotermet, MD,[a] David Devolder, PharmD,[c] Christine Breynaert, MD, PhD,[a,b] and Rik Schrijvers, MD, PhD[a,b,*]

During the worldwide coronavirus disease 2019 (COVID-19) vaccination campaign, a limited number of patients have experienced postvaccination anaphylaxis.[1] The exact mechanisms remain unknown, yet specific excipients—such as polyethylene glycol (PEG) in the Pfizer/BioNTech and Moderna vaccines and polysorbate 80 (PS80) in the AstraZeneca and Johnson & Johnson vaccines—have been identified as causal allergens in a minority of cases.[2, 3, 4, 5] Allergy to PEG and PS80 is

Polymers (Basel). 2022 Jan; 14(2): 279.
Published online 2022 Jan 11. doi: 10.3390/polym14020279
PMCID: PMC8779311
PMID: 35054686

Comparative Investigation of Cellular Effects of Polyethylene Glycol (PEG) Derivatives

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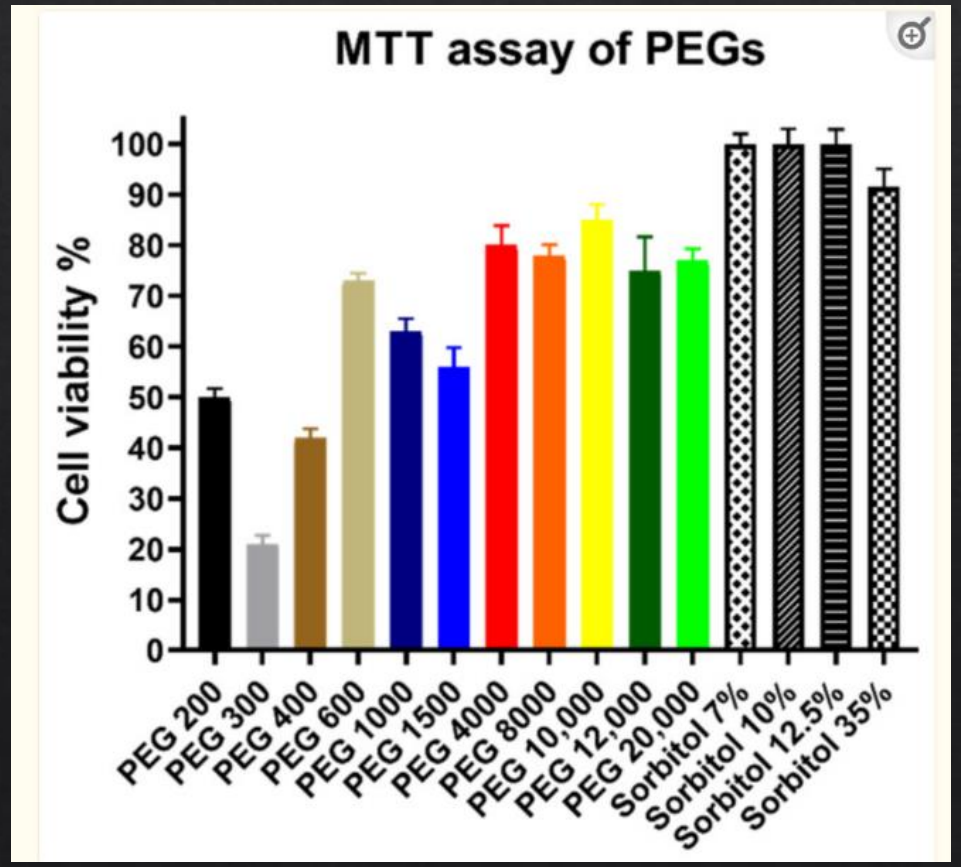
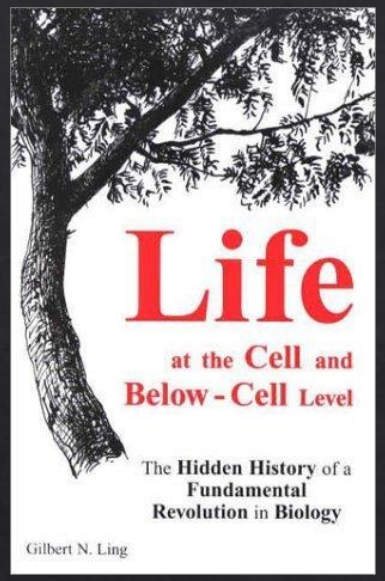
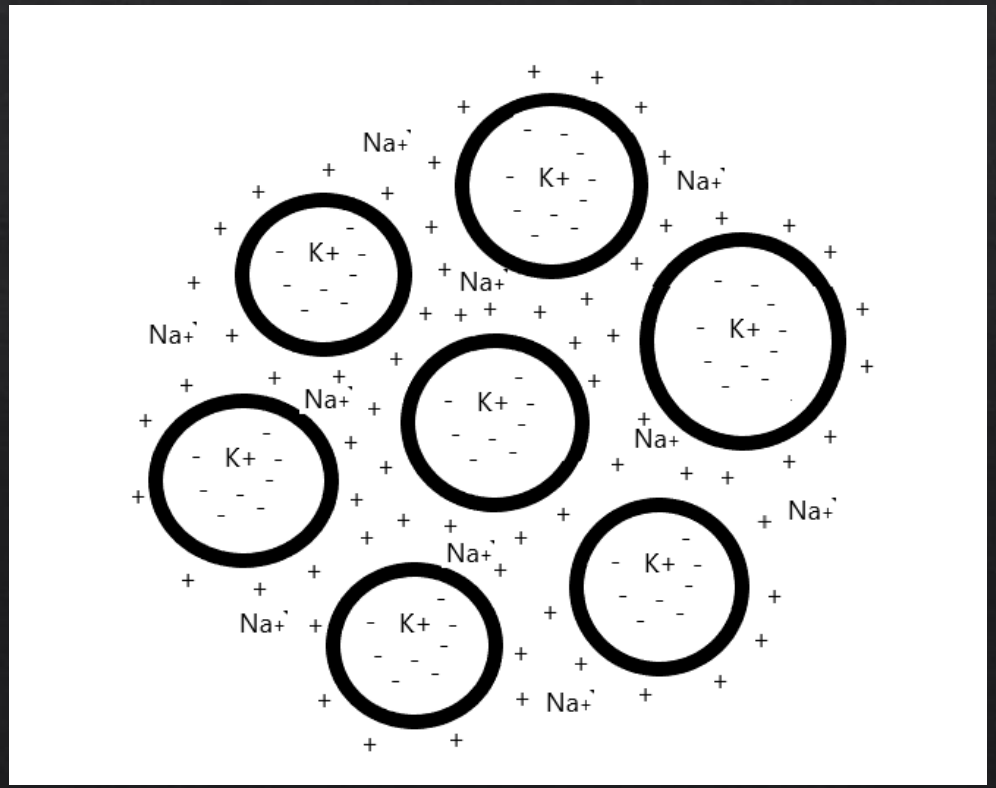
Hisham A. Alhadlaq, Academic Editor and Nadia Lotti, Academic Editor



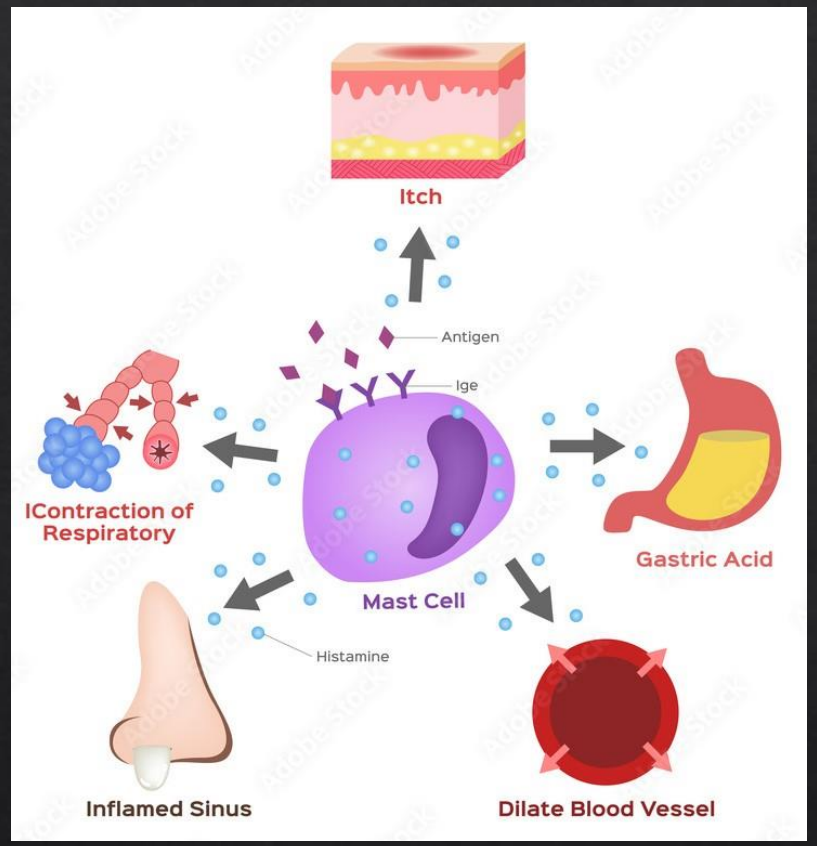
Gilbert Ling

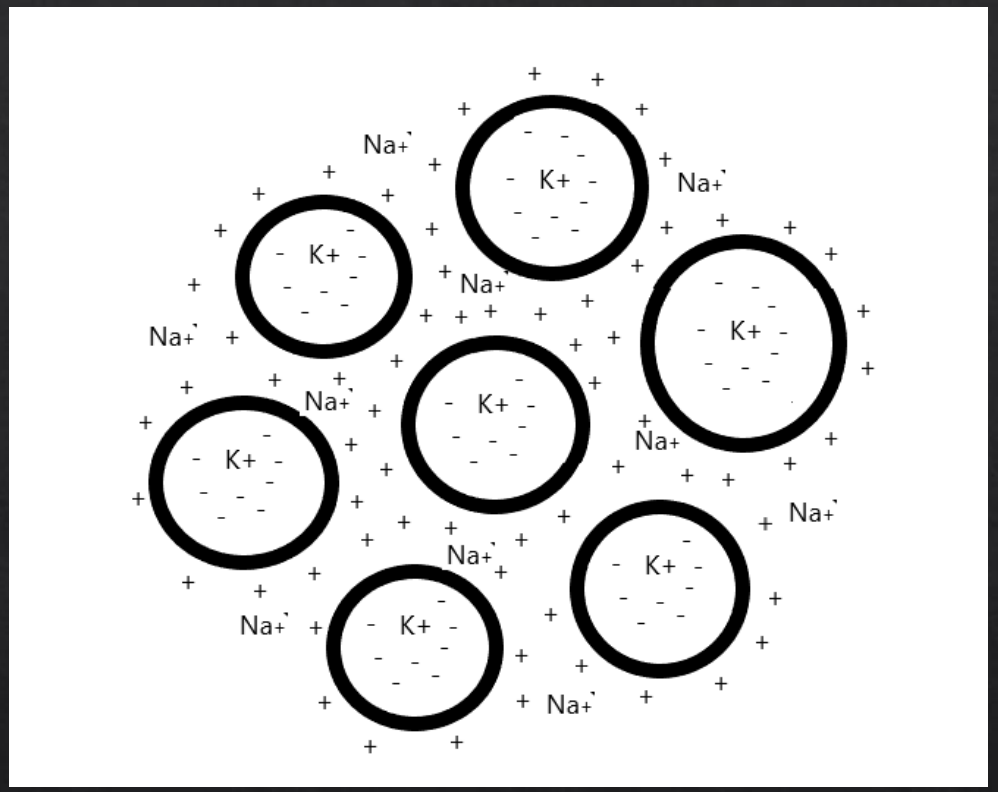


- "the inclusion of ethylene glycol caused first a shrinkage followed by a return to normal and above normal weight as more and more ethylene glycol enters the cell"

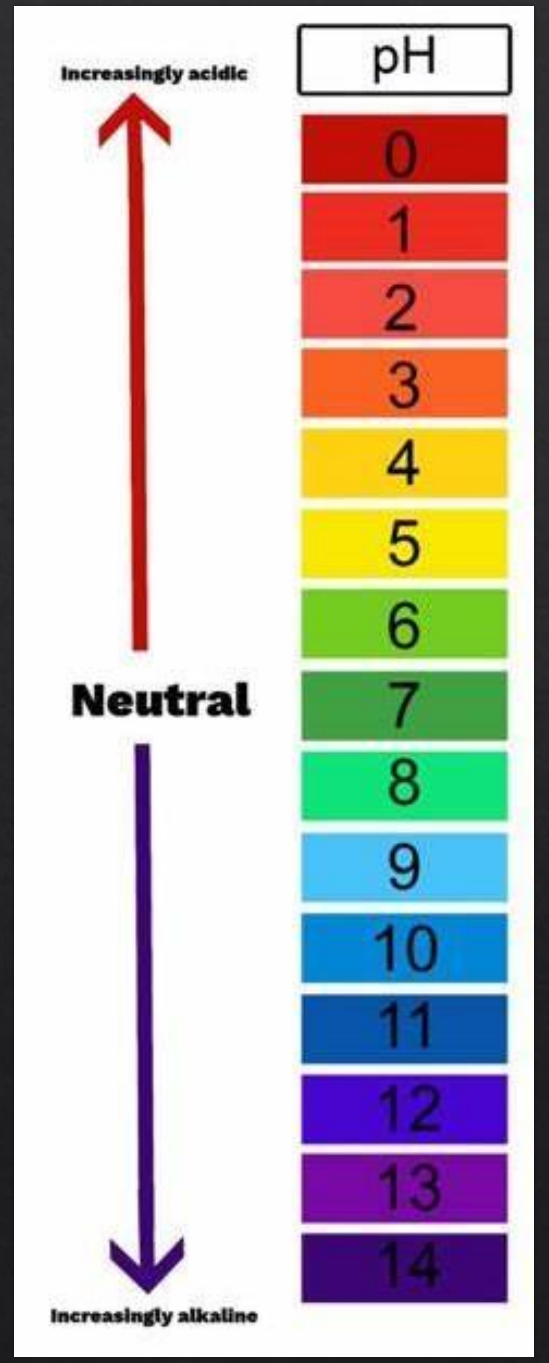


Anaphylaxis





7.35-7.45



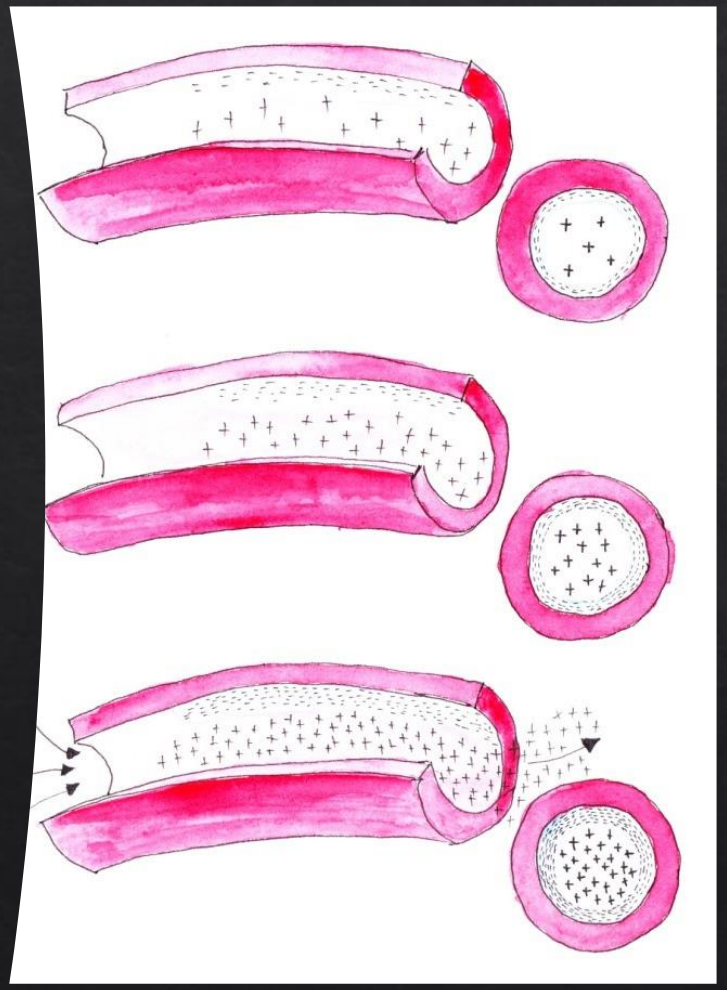
-Saeki, Kiyomi, Koiti Endo, and Hidemasa Yamasaki. "Histamine Release by Inorganic Cations from Mast Cell Granules Isolated by Different Procedures." *Japanese Journal of Pharmacology* 22, no. 1 (1972), 27-32. doi:10.1016/s0021-5198(19)31704-4.

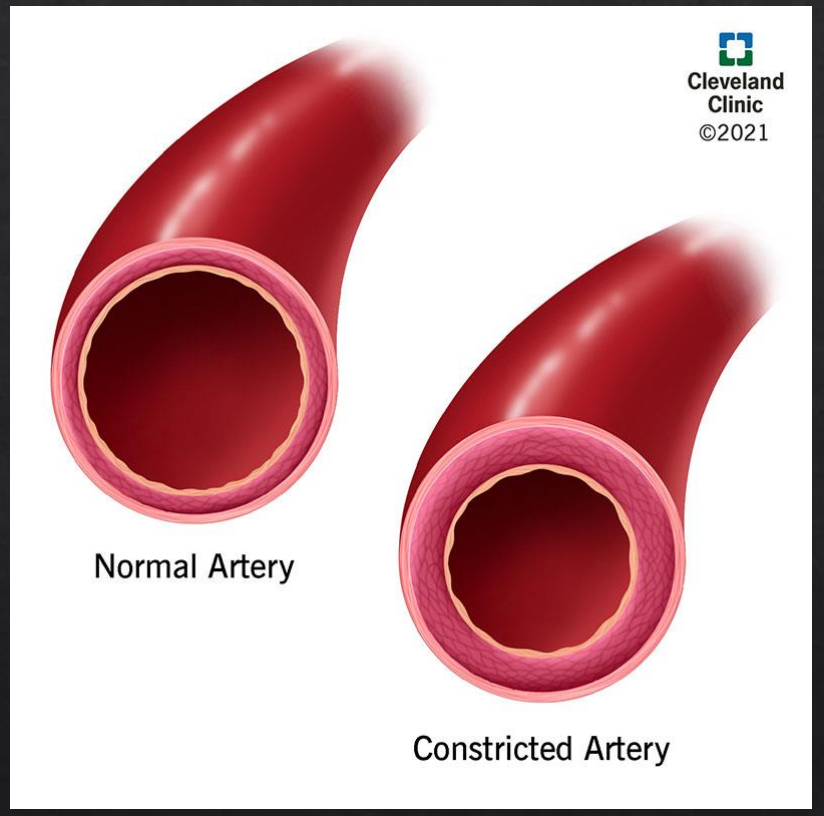
Clotting

Virchow's Triad and Exclusion Zone Water

- EZ water protects the artery from damage
- EZ water prevents hemodynamic changes by keeping blood flowing
- EZ water prevents hypercoagulability by creating Zeta potential on blood elements

High Blood Pressure





Myocarditis, Pericarditis, and Pleuritis

JOURNAL ARTICLE

A case of myopericarditis with pleuritis following AstraZeneca Covid-19 vaccination FREE

Y -P Hung, K -S Sun

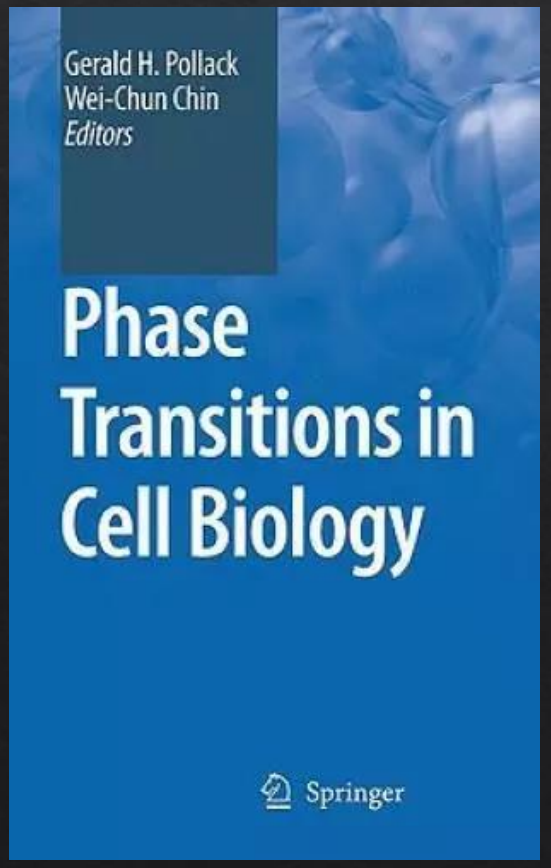
QJM: An International Journal of Medicine, Volume 114, Issue 12, December 2021, Pages 879–881, https://doi.org/10.1093/qjmed/hcab278

Published: 06 November 2021 **Article history**

Review > NPJ Vaccines. 2023 Jun 9;8(1):89. doi: 10.1038/s41541-023-00681-3.

Systematic review and meta-analysis of myocarditis and pericarditis in adolescents following COVID-19 BNT162b2 vaccination

Patrick D M C Katoto [1 2 3], Liliane N Byamungu [4], Amanda S Brand [5], Jacques L Tamuzi [5], Mireille A M Kakubu [6], Charles S Wiysonge [5 7 8], Glenda Gray [9]



"extracellular matrix is the best example: the solid part of the gel both constitutes a physical barrier separating organisms into tissue compartments, and plays a major role in cell adhesion."

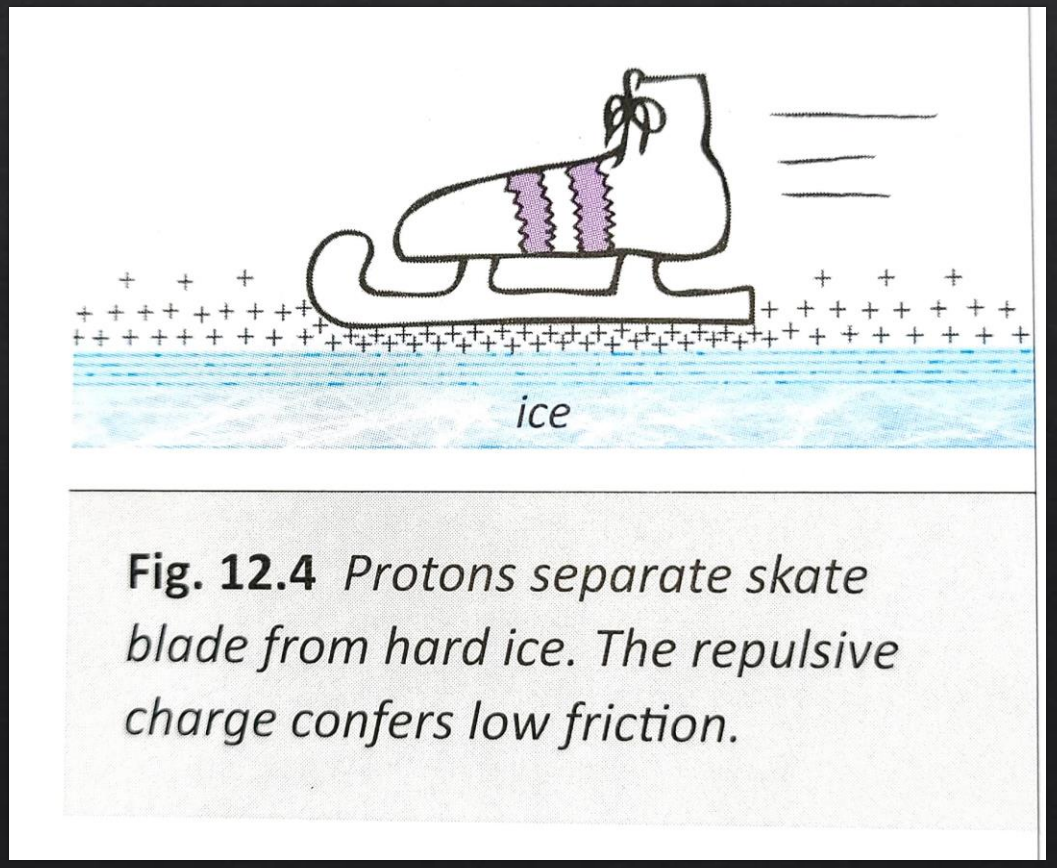
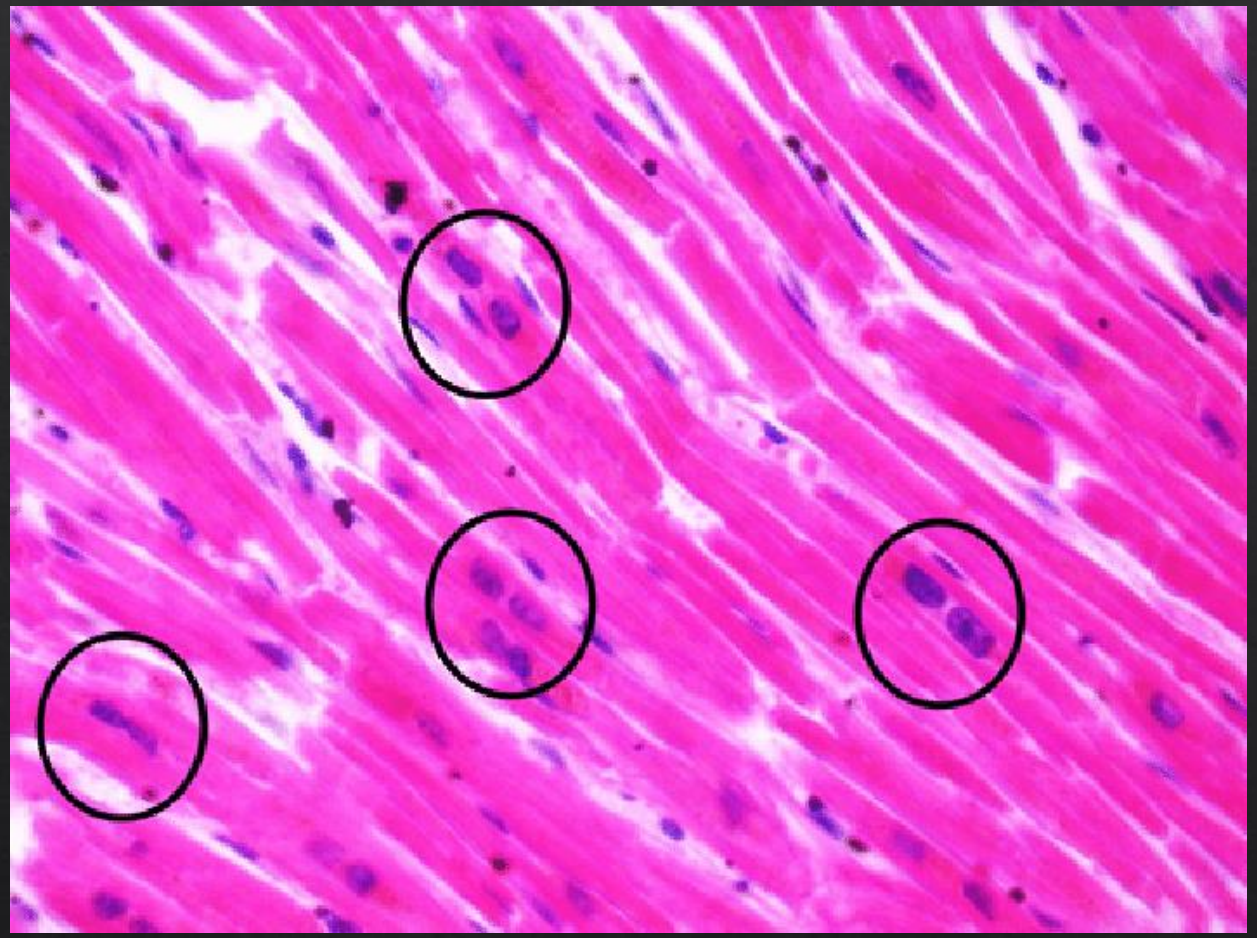
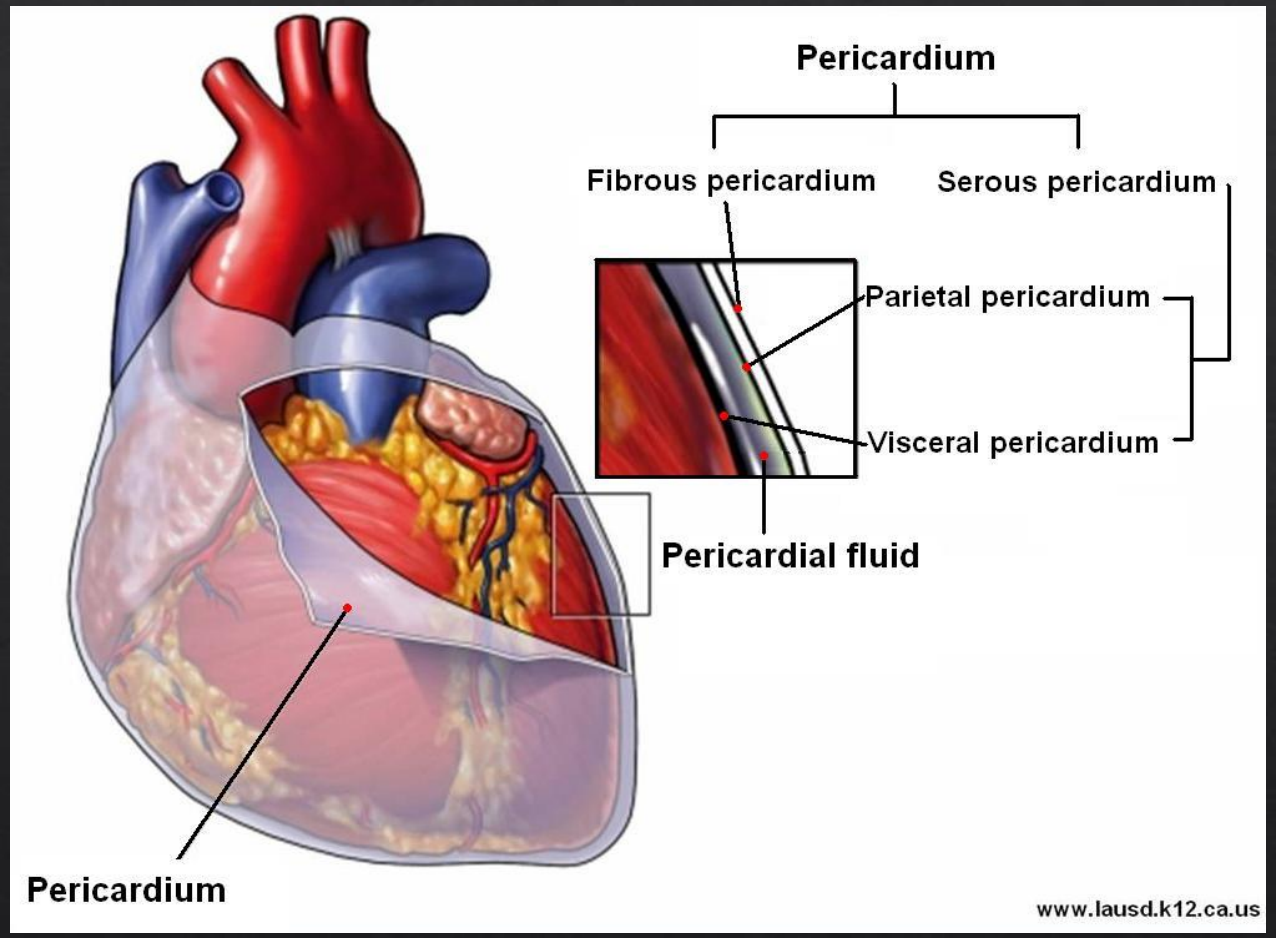
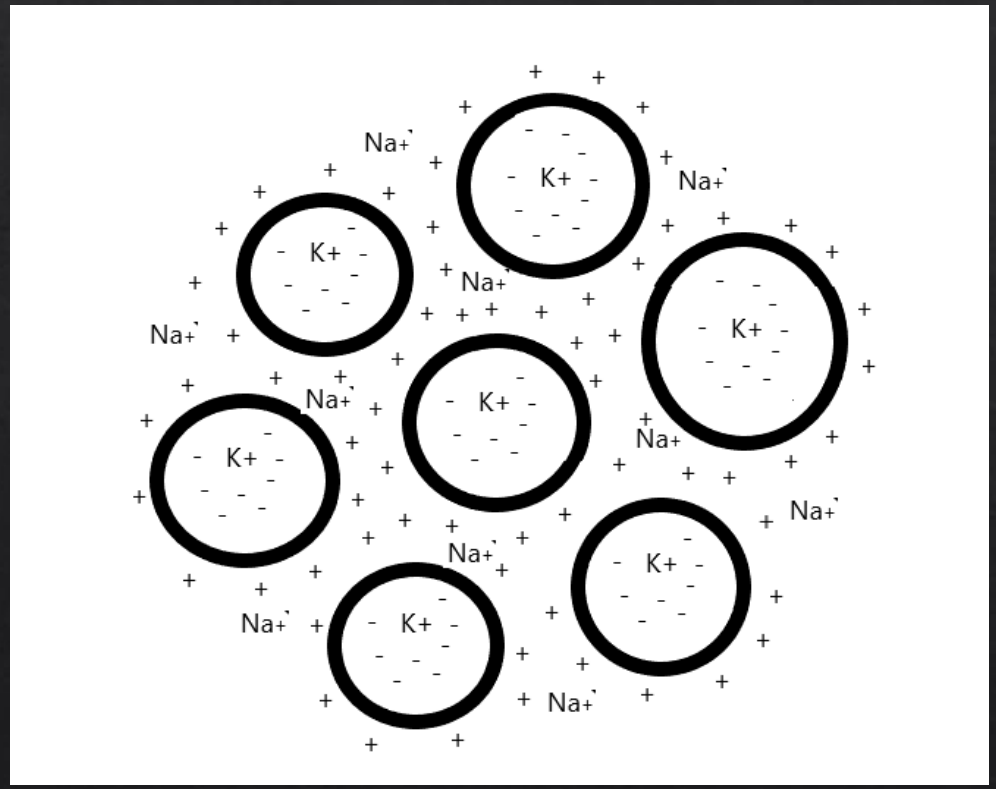


Fig. 12.4 *Protons separate skate blade from hard ice. The repulsive charge confers low friction.*




Pericardium
Fibrous pericardium
Serous pericardium
Parietal pericardium
Visceral pericardium
Pericardial fluid
Pericardium
www.lausd.k12.ca.us

Cancer



Review

The distinguishing electrical properties of cancer cells

Elisabetta Di Gregorio [a b 1], Simone Israel [a b 1], Michael Staelens [c 1], Gabriella Tankel [d], Karthik Shankar [e], Jack A. Tuszyński [a c f]

Role of Membrane Potential in the Regulation of Cell Proliferation and Differentiation

Published: 27 June 2009

Volume 5, pages 231–246, (2009) Cite this article

“The irreversible injuring of respiration is followed, as the second phase of cancer formation, by a long struggle for existence by the injured cells to maintain their structure, in which a part of the cells perish from lack of energy, while another part succeeds in replacing the irretrievably lost respiratory energy by fermentation energy. Because of the morphological inferiority of fermentation energy, the highly differentiated body cells are converted by this into undifferentiated cells that grow wildly — the cancer cells.”

-Otto Warburg

What Can We Do To Heal?

Create EZ Water/Charge the Body

- Good water (spring water, glacial melt, vortexed water, no toxins in water)
- Avoid toxins (glyphosate, plastics, heavy metals, etc.) – (Abha, S., et al. 2018)
- Avoid nnEMF's (reduce EZ 15-20%) – (Lee, J.W., et al. 2021, Abdi, S., et al. 2016)
- Optimize Circadian Rhythm (sync body to day/night cycle, lipid metabolism. leptin, melatonin, insulin resistance)
- Eat good fats (ghee, butter, lard, tallow, etc.)
- Grounding/earthing (increases Zeta potential and blood flow) – (Chevalier, G., et al. 2013, Chevalier, G., et al. 2015)
- Infrared light exposure (infrared sauna, sunrise, sunset) – (Imamura, M., et al. 2001)
- Exercise (especially to the point of creating heat)
- Cold exposure (increase structured water production in mitochondria)
- Positive loving relationships/express gratitude – (Radin, D., et al. 2006)

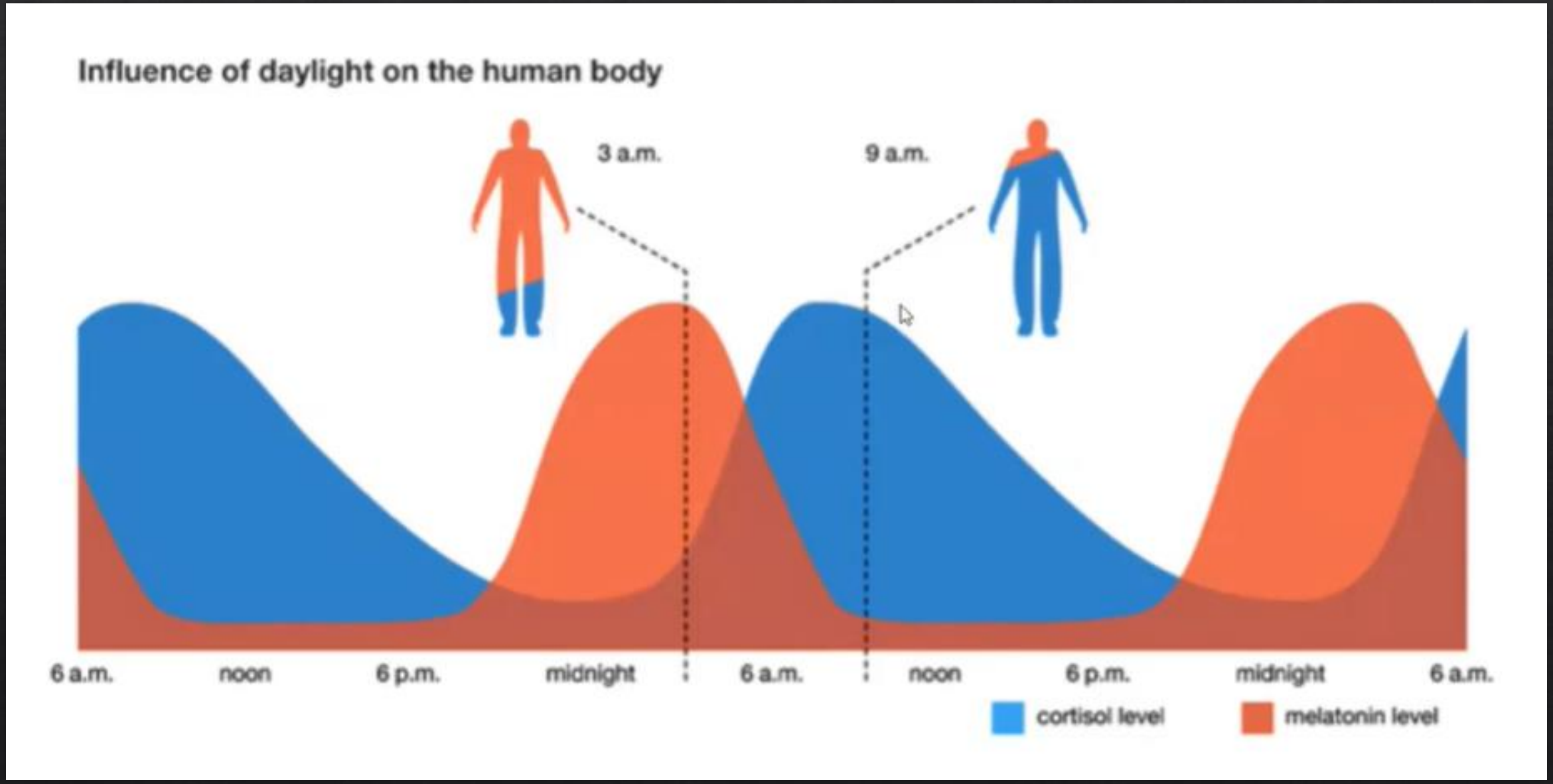
Detoxification

- Avoid Toxin Exposure
- Sweat
- Keep elimination pathways open

Melatonin

- Triggers deep restorative sleep
- Mitophagy
- Autophagy
- Lymphatic drainage
- Glymphatic drainage
- Gut renewal and repair

Circadian Rhythm



Circadian Rhythm

- Optimize Circadian Rhythm
  - See sunrise
  - Get mid-morning light
  - Get adequate sunlight throughout the day
  - Block blue light after sunset

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