

Casual Friday Series

Immune Boost? When and why...Part 2

A Biogenetix Clinical Presentation

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Disclaimer

- *Information in this presentation is not intended, in itself, to diagnose, treat, reverse, cure, or prevent any disease. While this presentation is based on medical literature, findings, and text, The following statements have not been evaluated by the FDA.*
- *The information provided in this presentation is for your consideration only as a practicing health care provider. Ultimately you are responsible for exercising professional judgment in the care of your own patients.*





Lifestyle + Genetics = Chronic Health IMPROVEMENT



Back in the Day: TH1 vs TH2

Intracellular

TH1

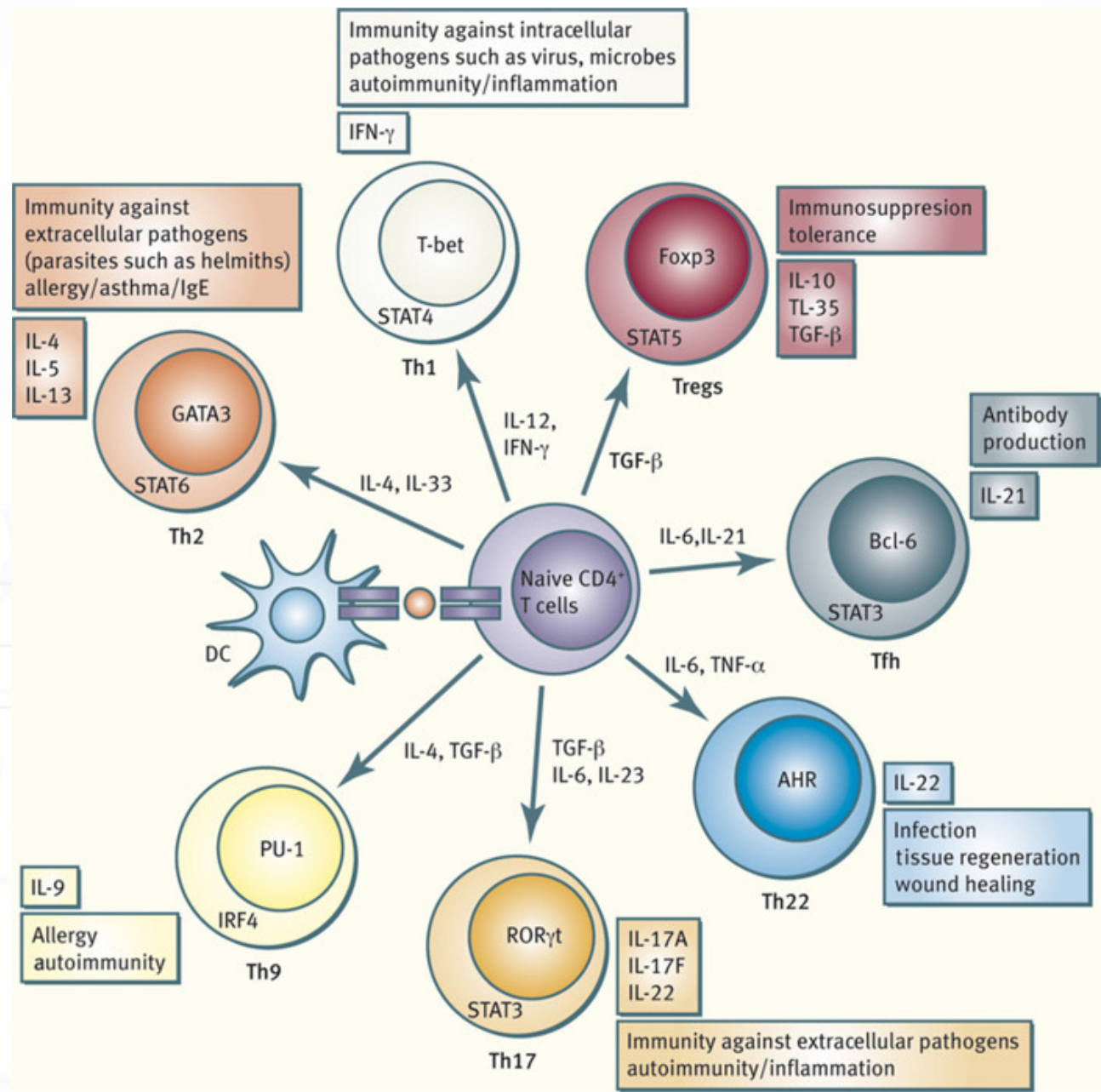
- Multiple sclerosis
- Hashimoto's
- Grave's
- Rheumatoid arthritis
- Lyme arthritis
- Psoriatic arthritis
- Contact dermatitis
- Type 1/1.5 diabetes
- Erythema nodosum
- Frequent spontaneous abortion
- Psoriasis
- Primary biliary cirrhosis
- Pulmonary sarcoidosis
- Crohn's disease
- Inflammatory bowel disease
- Etc.

Extracellular

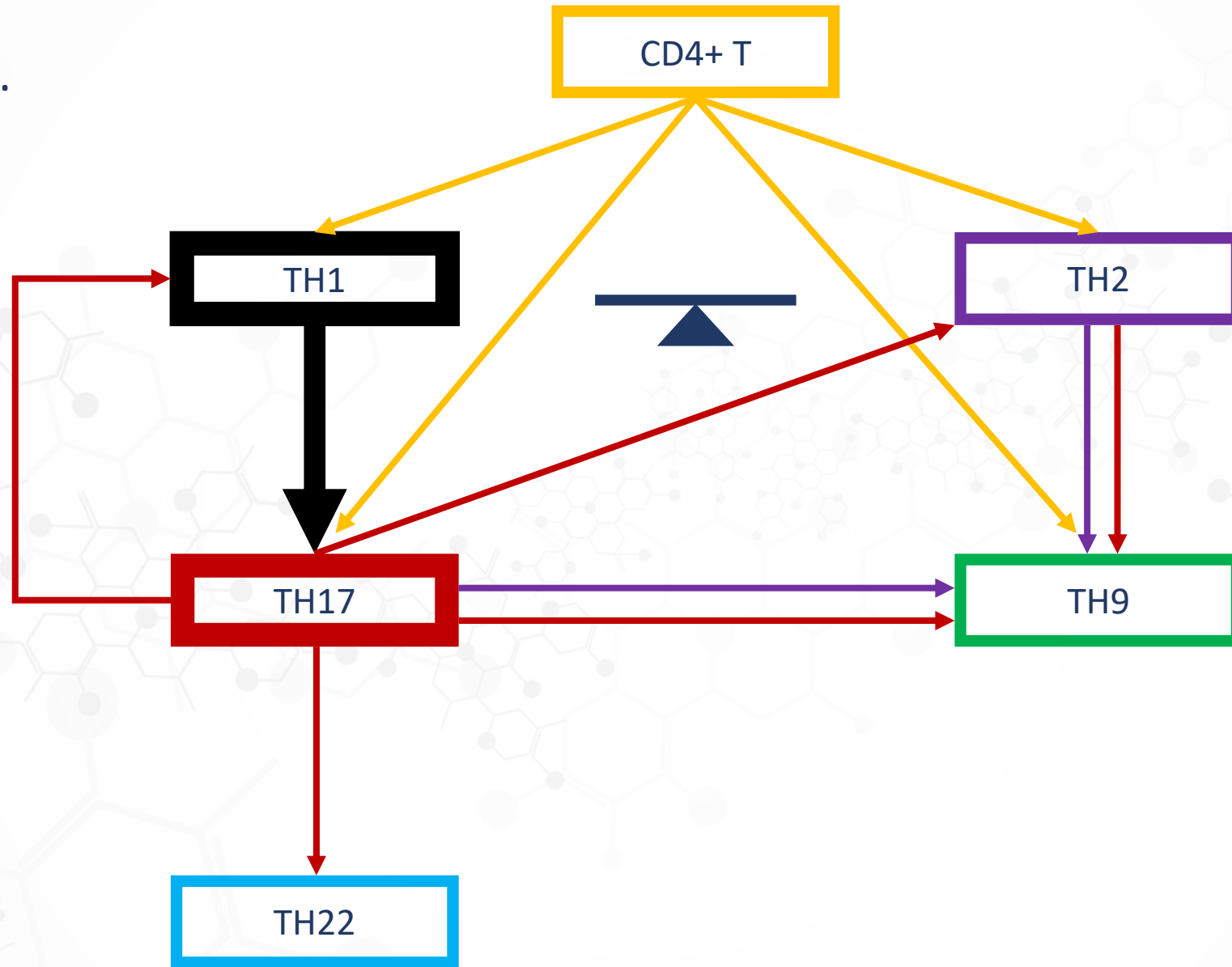
TH2

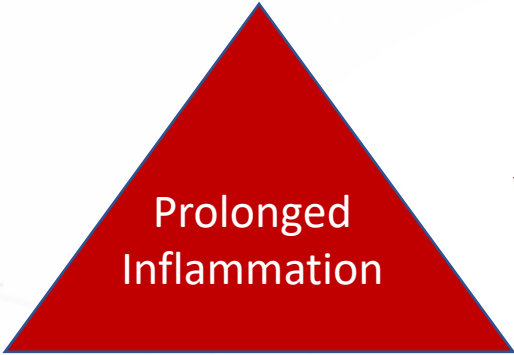
- Asthma
- Atopic dermatitis
- Conjunctivitis
- Hyper eosinophilia
- Allergies
- Normal pregnancy
- Systemic lupus erythematosus
- Sclera derma
- Etc.





An up-to-date understanding...





Lupus

diabetes

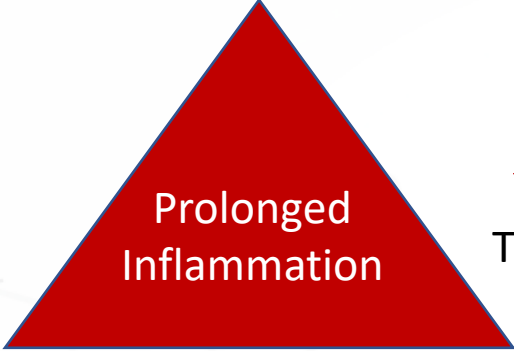
AI thyroid



TH1

- Lifestyle:
- Food allergies
- mold
- LPS
- Blood Sugar Balance
- Alcohol
- Infections, etc.





TH17

Lupus

diabetes

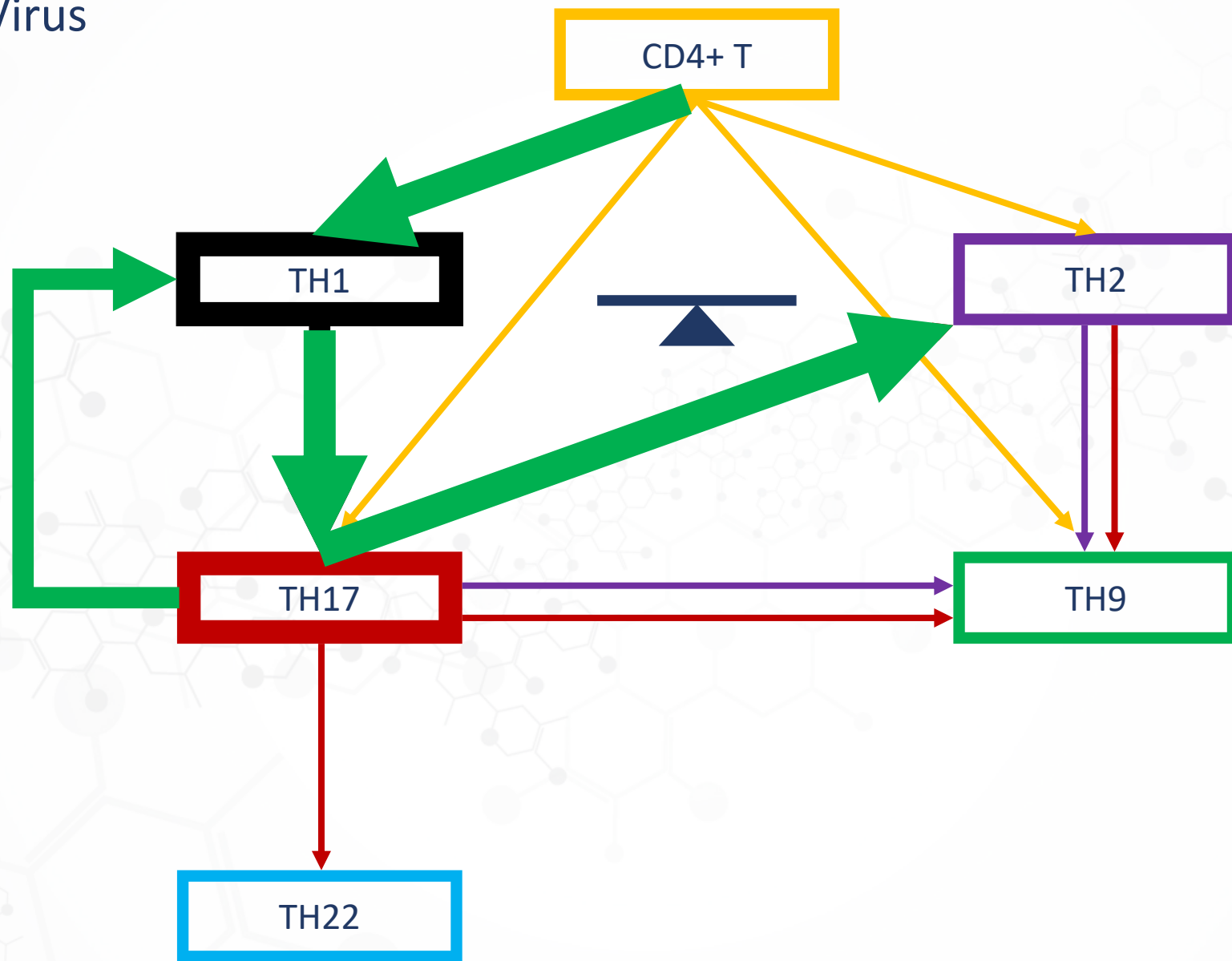
AI thyroid

TH1

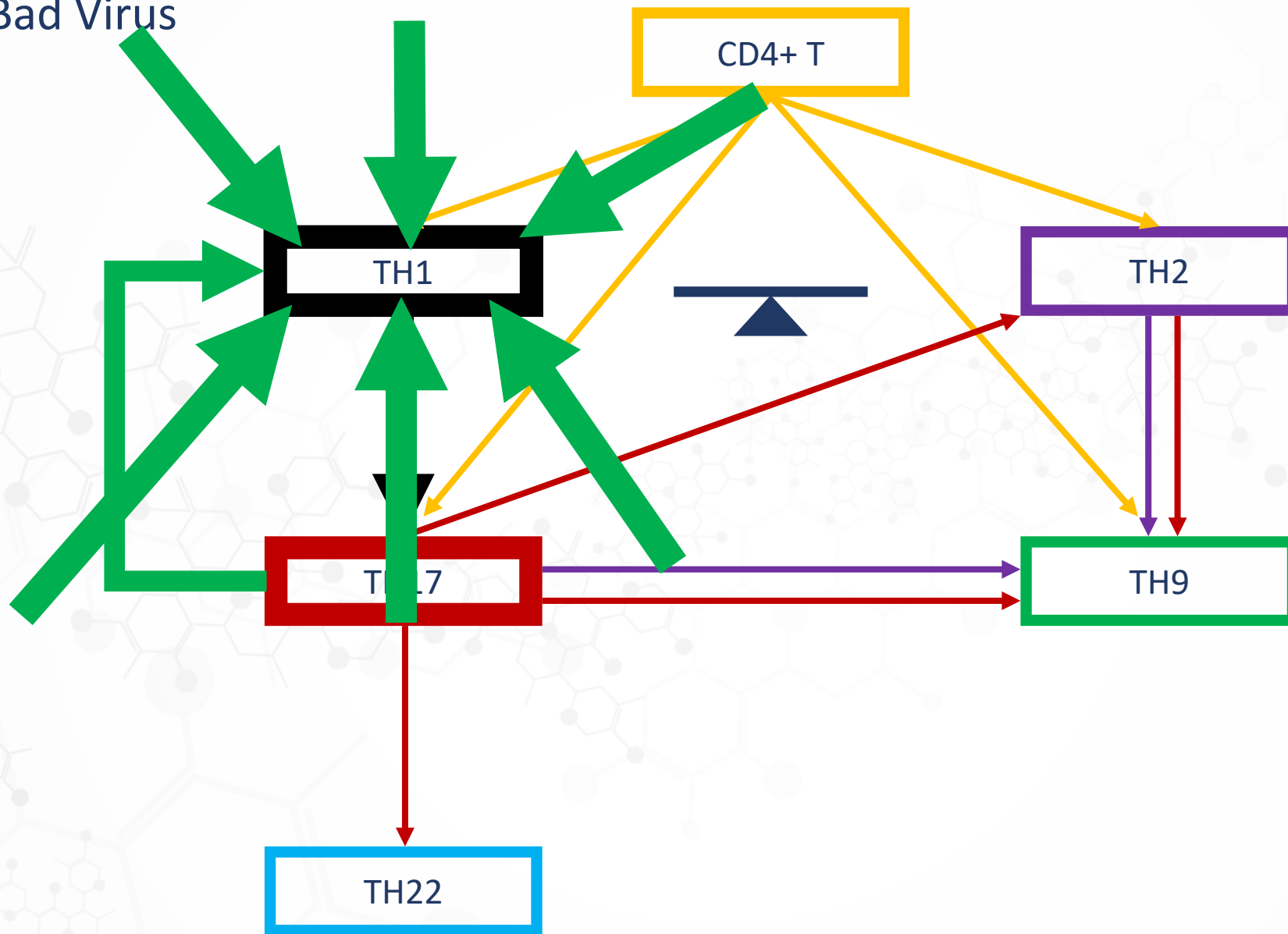
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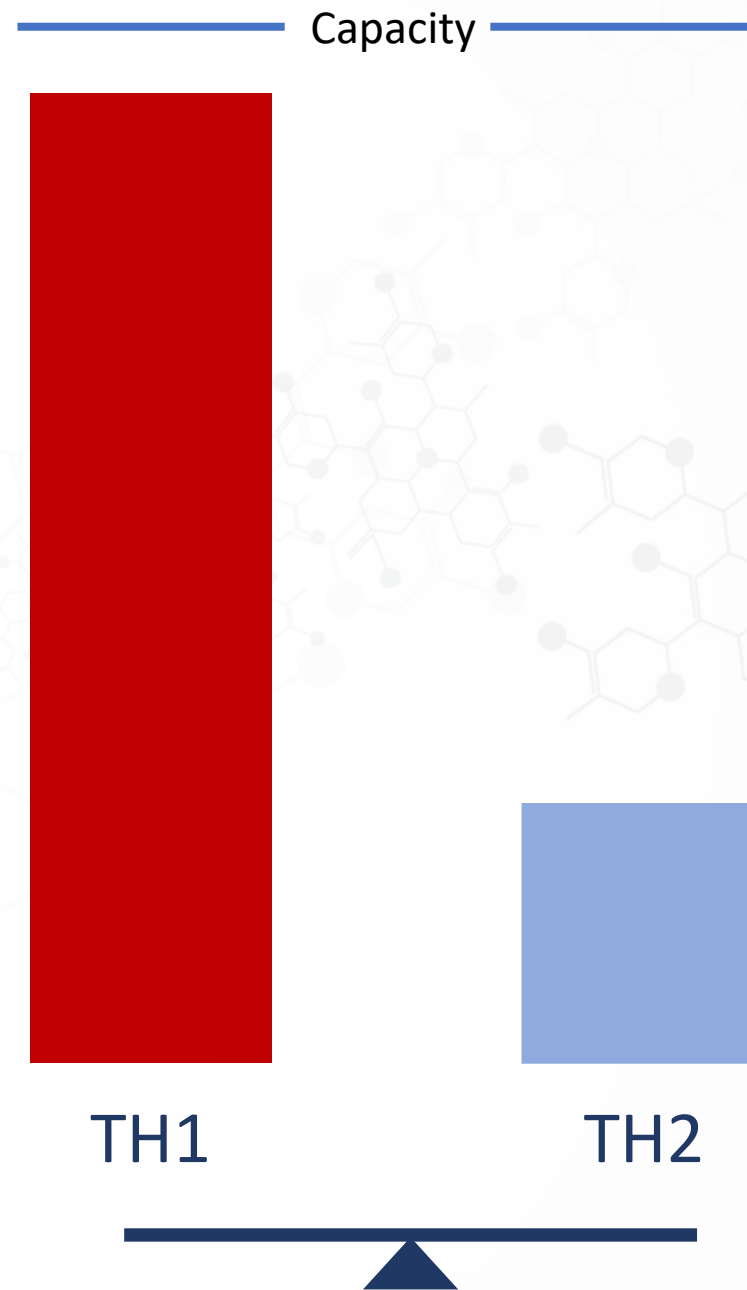
BBV – Big Bad Virus



BBV – Big Bad Virus



What happens when this
TH1 on-ramp is fully
committed?



T-Helper Cell Subset Response Is a Determining Factor in COVID-19 Progression

[Francisco Javier Gil-Etayo](#)¹ [Patricia Suárez-Fernández](#)² [Oscar Cabrera-Marante](#)¹ [Daniel Arroyo](#)¹ [Sara Garcinuño](#),

² [Laur](#)

[Raquel](#)

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The immune response type organized against viral infection is determinant in the prognosis of some infections. This work has aimed to study Th polarization in acute COVID-19 and its possible association with the outcome through an observational prospective study. Fifty-eight COVID-19 patients were recruited in the Medicine Department of the hospital “12 de Octubre,” 55 patients remaining after losses to follow-up. Four groups were established according to maximum degree of disease progression. T-helper cell percentages and phenotypes, analyzed by flow cytometer, and serum cytokines levels, analyzed by Luminex, were evaluated when the microbiological diagnosis (acute phase) of the disease was obtained. Our study found a significant reduction of %Th1 and %Th17 cells with higher activated %Th2 cells in the COVID-19 patients compared with reference population. A higher percent of senescent Th2 cells was found in the patients who died than in those who survived. Senescent Th2 cell percentage was an independent risk factor for death (OR: 13.88) accompanied by the numbers of total lymphocytes (OR: 0.15) with an AUC of 0.879. COVID-19 patients showed a profile of pro-inflammatory serum cytokines compared to controls, with higher levels of IL-2, IL-6, IL-15, and IP-10. IL-10 and IL-13 were also elevated in patients compared to controls. Patients who did not survive presented significantly higher levels of IL-15 than those who recovered. No significant differences were observed according to disease progression groups. The study has shown that increased levels of IL-15 and a high Th2 response are associated with a fatal outcome of the disease.



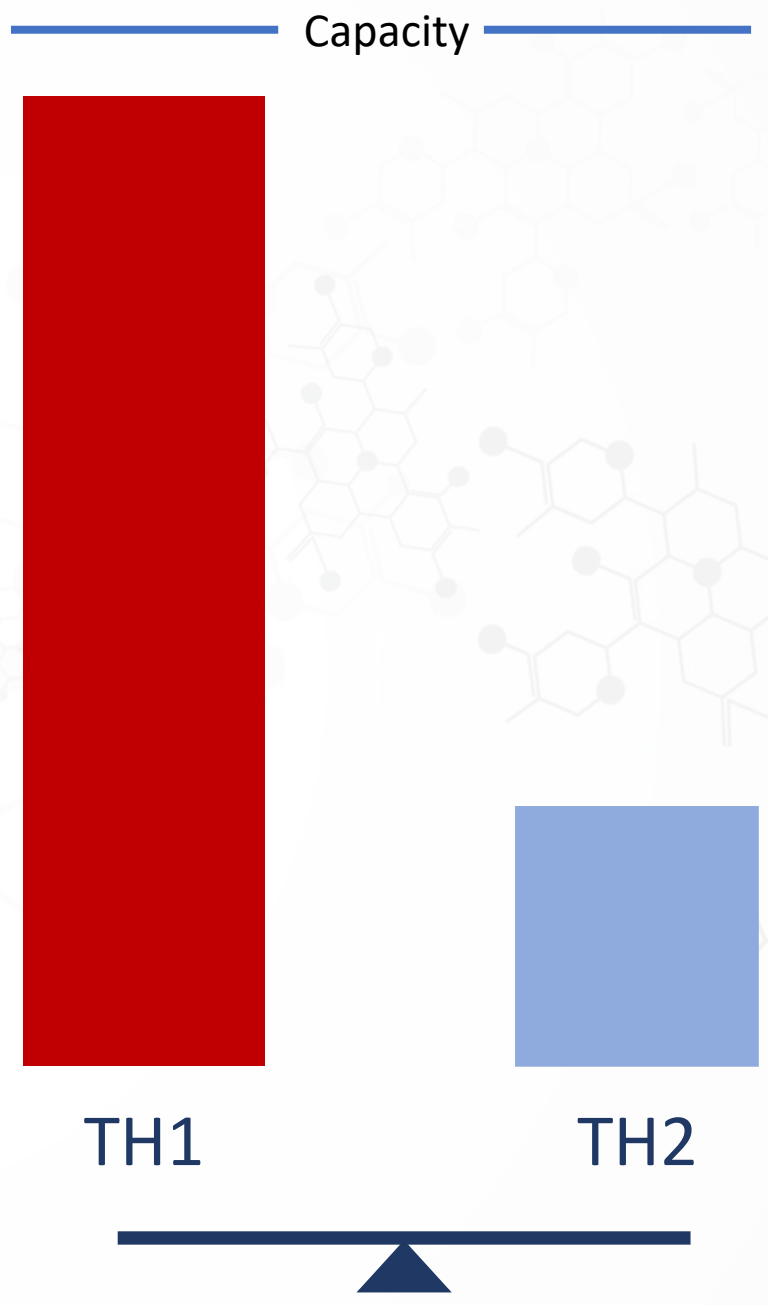
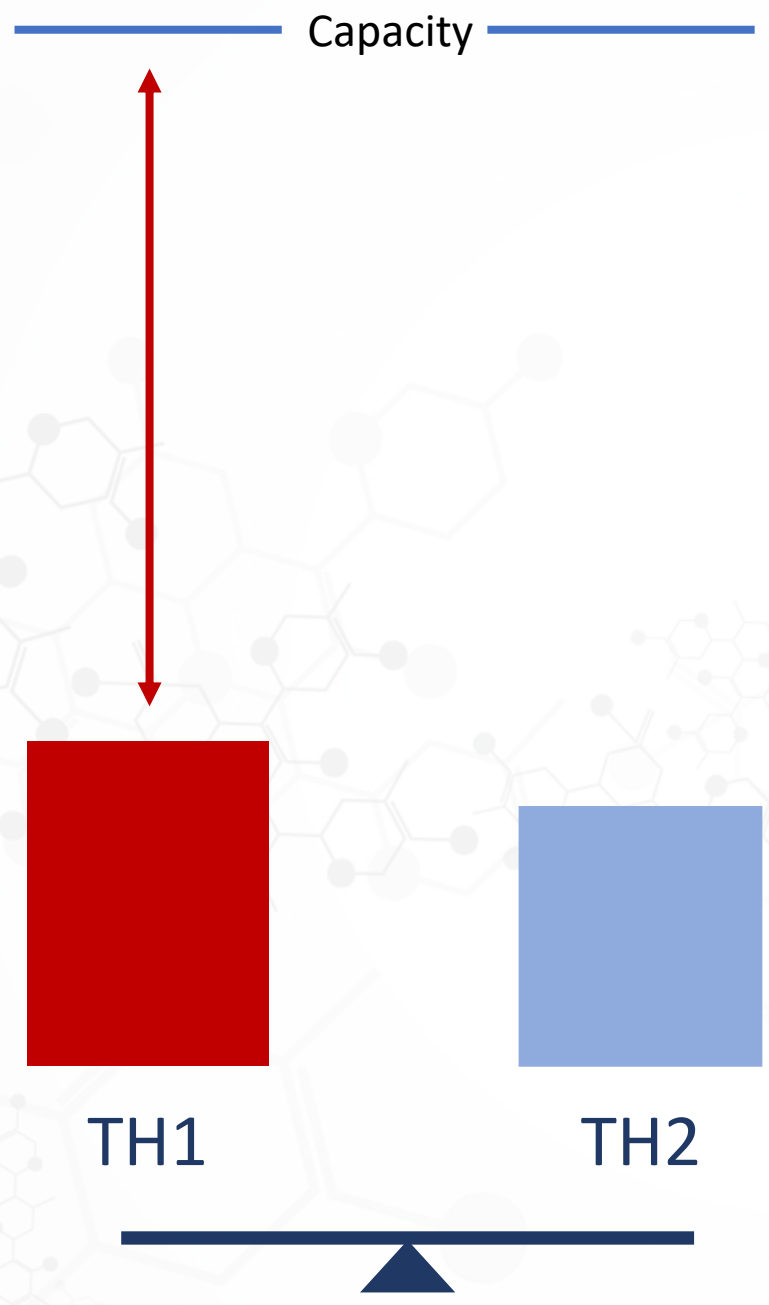
Cellular Senescence

Cellular senescence is defined as irreversible cell cycle arrest driven by a variety of mechanisms, including telomere shortening, other forms of genotoxic stress, or mitogens or inflammatory cytokines, that culminate in the activation of the p53 tumor suppressor and/or the cyclin-dependent kinase inhibitor p16.

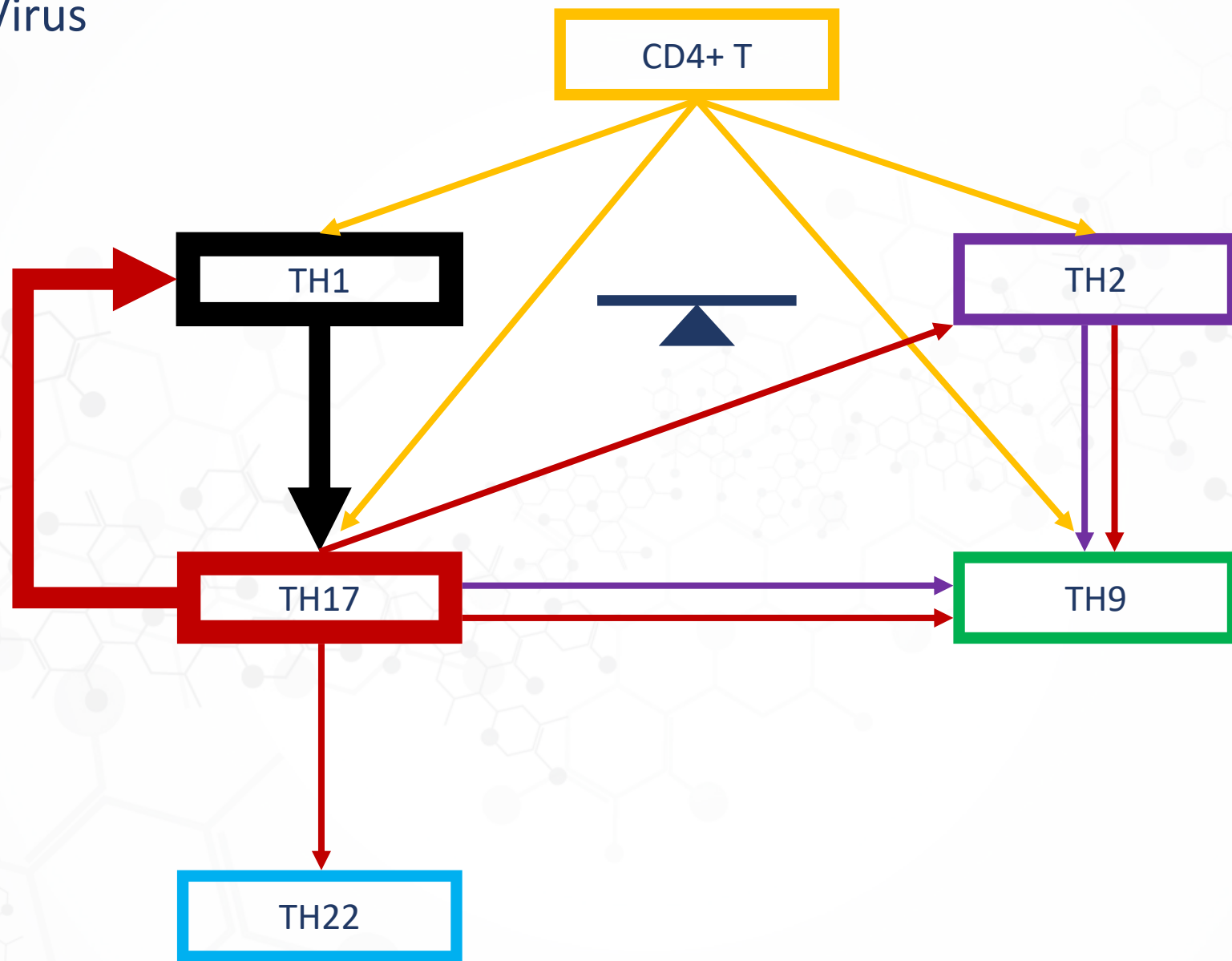
<https://www.sciencedirect.com/topics/medicine-and-dentistry/cellular-senescence>



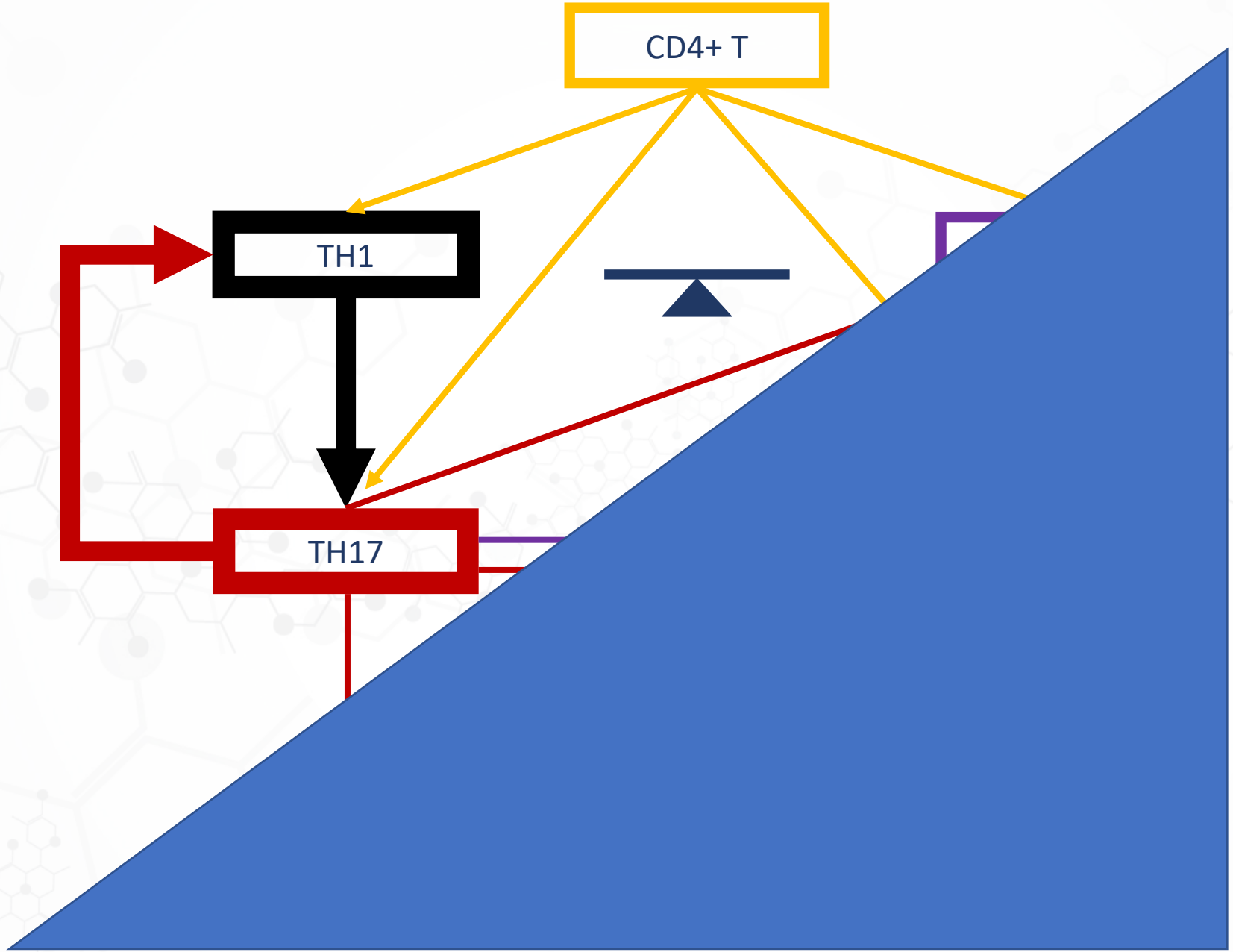
Concept #1



BBV – Big Bad Virus



Concept #2



Case #1
53 YO Female

CBC With Differential/Platelet

WBC	4.9		x10E3/uL	3.4-10.8
RBC	5.21		x10E6/uL	3.77-5.28
Hemoglobin	14.8		g/dL	11.1-15.9
Hematocrit	43.0		%	34.0-46.6
MCV	83		fL	79-97
MCH	28.4		pg	26.6-33.0
MCHC	34.4		g/dL	31.5-35.7
RDW	13.1		%	11.7-15.4
Platelets	376		x10E3/uL	150-450
Neutrophils	48		%	Not Estab.
Lymphs	41		%	Not Estab.
Monocytes	7		%	Not Estab.
Eos	3		%	Not Estab.
Basos	1		%	Not Estab.
Neutrophils (Absolute)	2.4		x10E3/uL	1.4-7.0
Lymphs (Absolute)	2.0		x10E3/uL	0.7-3.1
Monocytes (Absolute)	0.3		x10E3/uL	0.1-0.9
Eos (Absolute)	0.1		x10E3/uL	0.0-0.4
Baso (Absolute)	0.0		x10E3/uL	0.0-0.2
Immature Granulocytes	0		%	Not Estab.
Immature Grans (Abs)	0.0		x10E3/uL	0.0-0.1

Lipids

Cholesterol, Total	223	High	mg/dL	100-199
Triglycerides	81		mg/dL	0-149
HDL Cholesterol	73		mg/dL	>39
VLDL Cholesterol Cal	14		mg/dL	5-40
LDL Chol Calc (NIH)	136	High	mg/dL	0-99
T. Chol/HDL Ratio	3.1		ratio	0.0-4.4

Please Note:



Case #1
53 YO Female

Hgb A1c with eAG Estimation

Hemoglobin A1c	10.4	High	%	4.8-5.6
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Please Note:

Prediabetes: 5.7 - 6.4

Diabetes: >6.4

Glycemic control for adults with diabetes: <7.0

Estim. Avg Glu (eAG)	252		mg/dL	
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Glucose	263	High	mg/dL	65-99
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BUN	5	Low	mg/dL	6-24
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Creatinine	0.63		mg/dL	0.57-1.00
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eGFR If NonAfrican Am	103		mL/min/1.73	>59
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Case #1
53 YO Female

Aspergillus



Multiple Mold Species



Case #
49 YO Female

CBC, Platelet Ct, and Diff ⁰¹				
WBC ⁰¹	6.3		x10E3/uL	3.4-10.8
RBC ⁰¹	4.23		x10E6/uL	3.77-5.28
Hemoglobin ⁰¹	12.0		g/dL	11.1-15.9
Hematocrit ⁰¹	38.1		%	34.0-46.6
MCV ⁰¹	90		fL	79-97
MCH ⁰¹	28.4		pg	26.6-33.0
MCHC ⁰¹	31.5		g/dL	31.5-35.7
RDW ⁰¹	14.9		%	11.7-15.4
Platelets ⁰¹	312		x10E3/uL	150-450
Neutrophils ⁰¹	46		%	Not Estab.
Lymphs ⁰¹	45		%	Not Estab.
Monocytes ⁰¹	7		%	Not Estab.
Eos ⁰¹	1		%	Not Estab.
Homocyst(e)ine ⁰¹	8.4		umol/L	0.0-14.5
TSH ⁰¹	2.870		uIU/mL	0.450-4.500
Thyroxine (T4) ⁰¹	7.0		ug/dL	4.5-12.0
T3 Uptake ⁰¹	25		%	24-39



Case #
49 YO Female

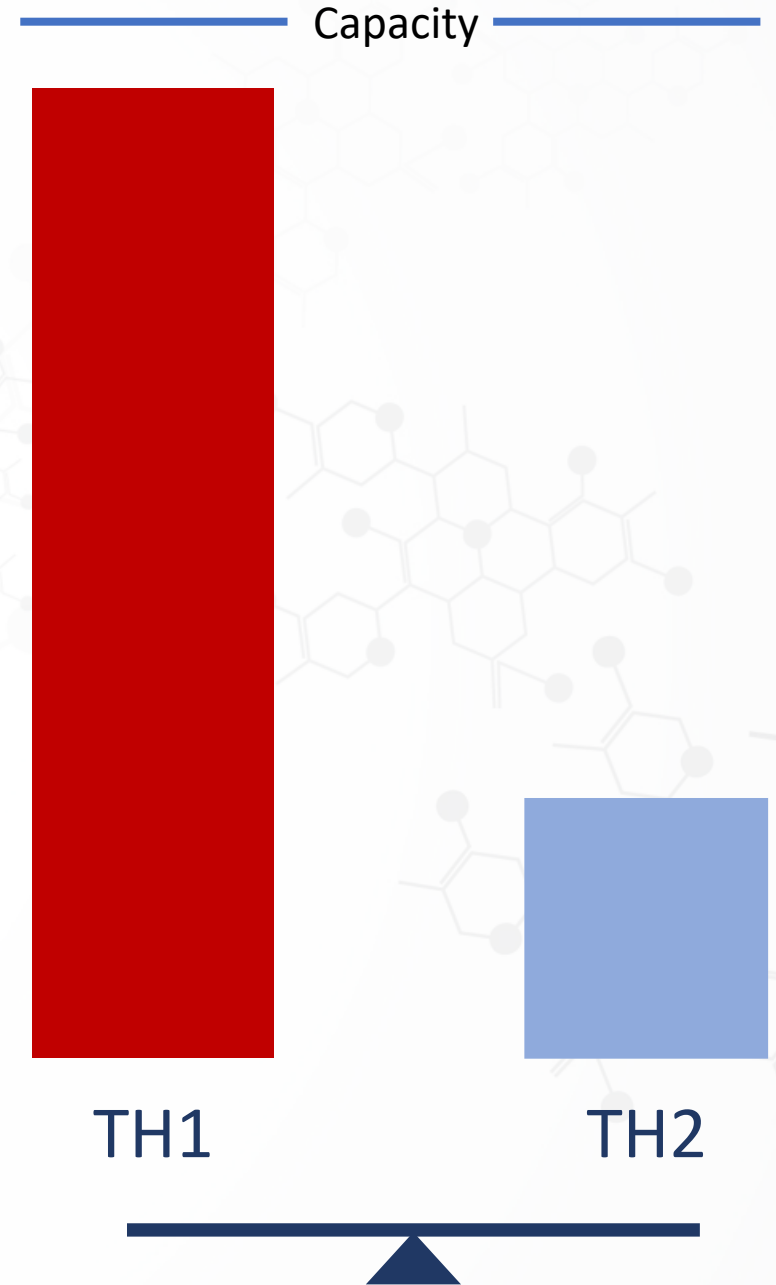
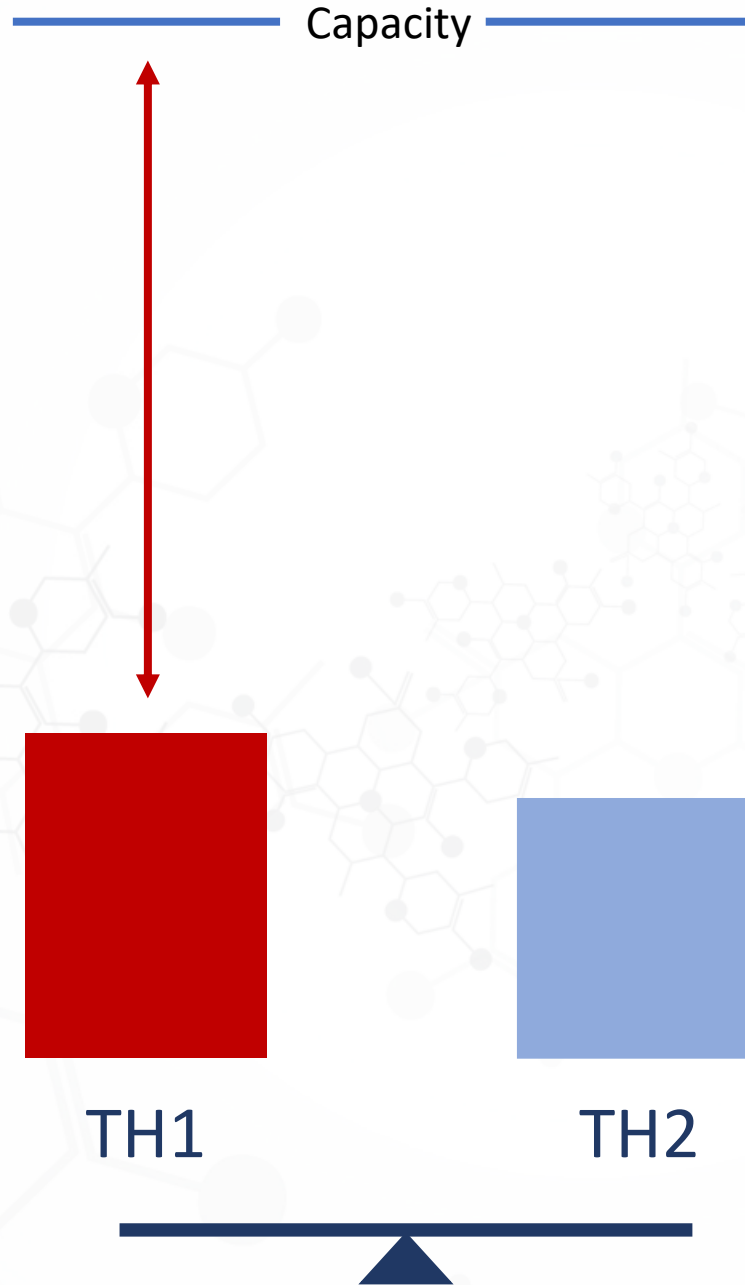
Free Thyroxine Index	1.8			1.2-4.9
Triiodothyronine (T3) ⁰¹	107		ng/dL	71-180
Triiodothyronine (T3), Free ⁰¹	2.7		pg/mL	2.0-4.4
Reverse T3, Serum ^{A, 02}	17.2		ng/dL	9.2-24.1
T4,Free(Direct) ⁰¹	1.12		ng/dL	0.82-1.77
Thyroid Peroxidase (TPO) Ab ⁰¹	<9		IU/mL	0-34
Thyroglobulin Antibody ⁰¹	<1.0		IU/mL	0.0-0.9

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Chemistries ⁰¹				
Glucose ⁰¹	90		mg/dL	65-99
▲ Hemoglobin A1c ⁰¹	5.9 High		%	4.8-5.6
Please Note: ⁰¹				

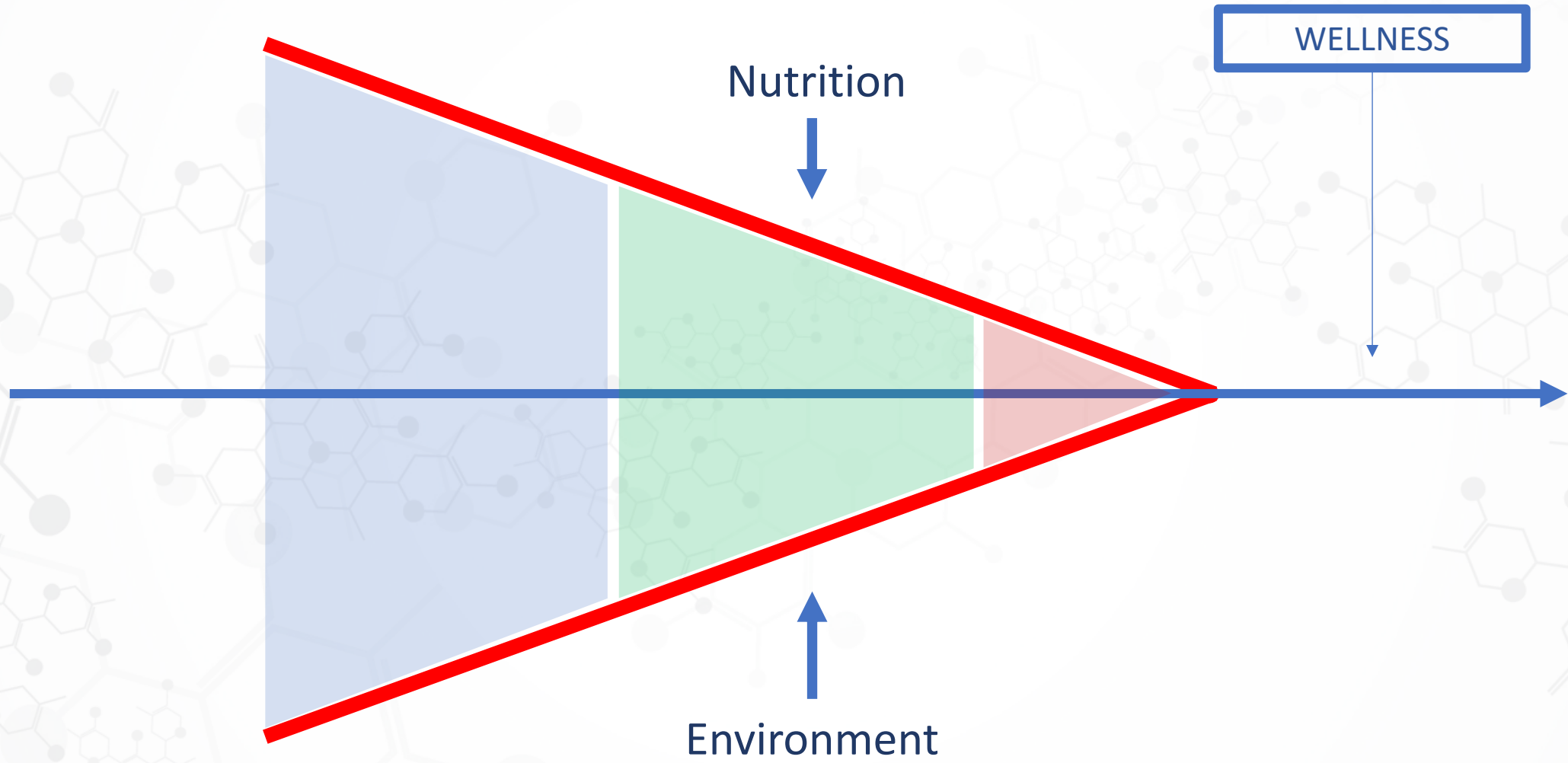


Summary Questions:

1. Are they chronically inflamed?
2. If I drive inflammation UP, what will the result be?



Protocols



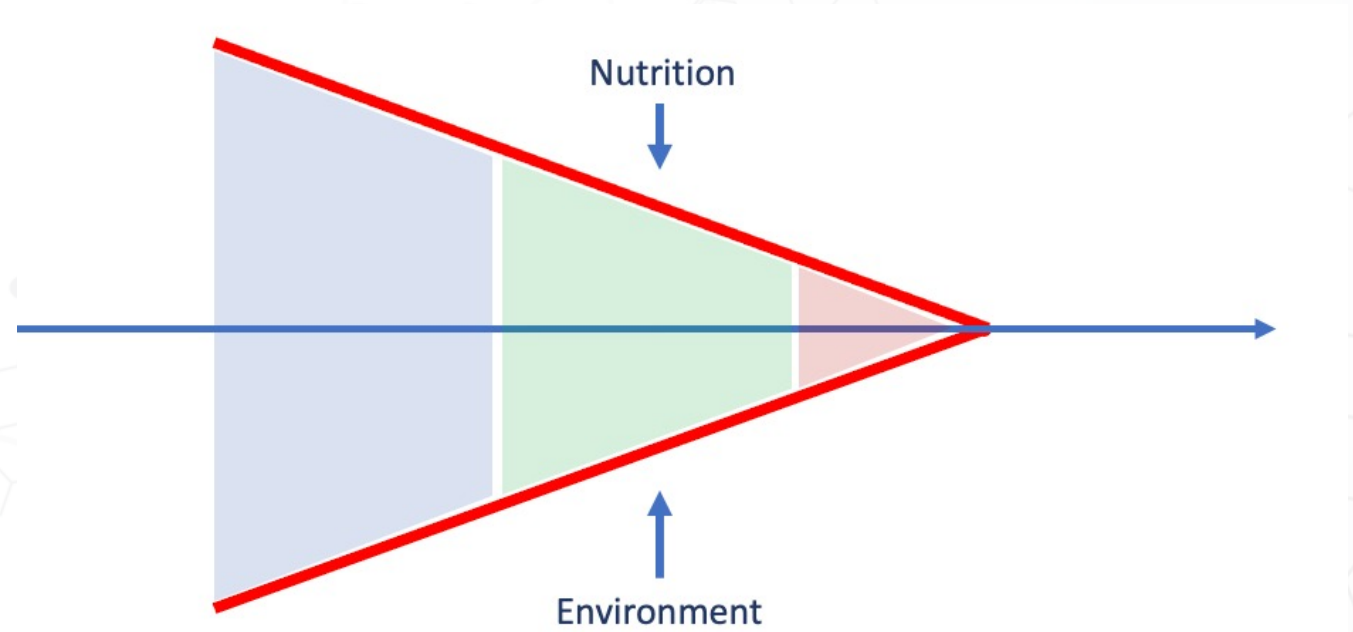
WELLNESS

Nutrition

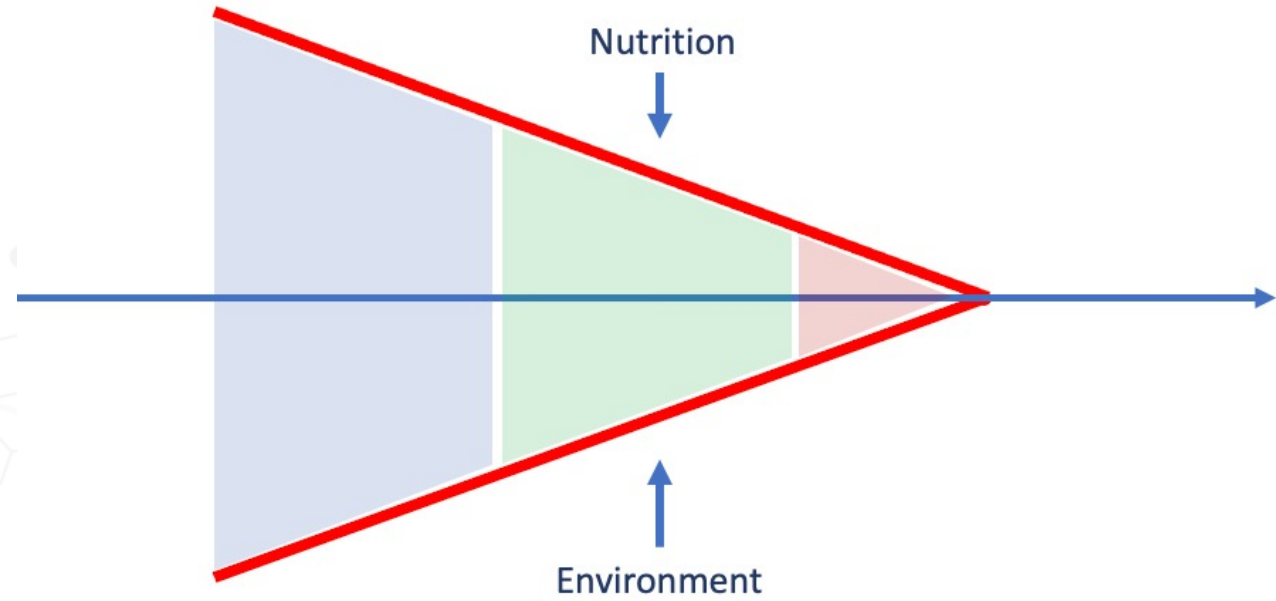
Environment



Immune Support



Immune Support



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