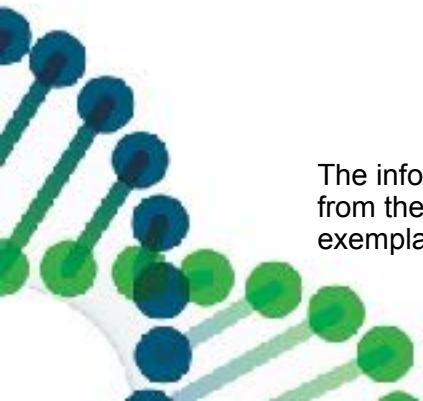




Principles of Strategic Medicine



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Disclosure:

Relationship with commercial interests - None
Disclosure of commercial support - None
Conflict of interest - None







(c) 2017: Dr BenLynch

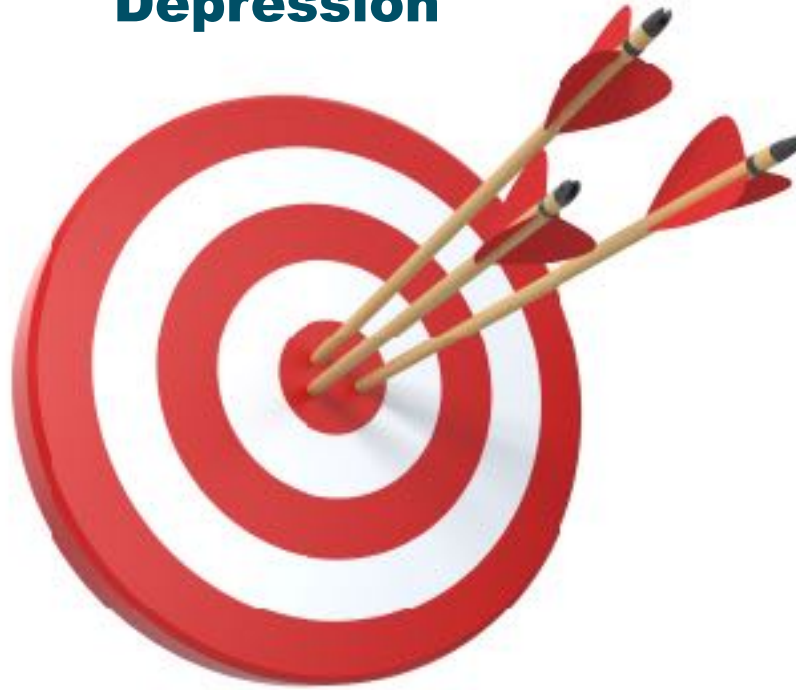
Anxiety



Downer

(c) 2017: Dr BenLynch

Depression



Upper

(c) 2017: Dr BenLynch



MTHFR C677T +/+

COMT V158M +/+

CBS C699T -/-

MAOA T941G +/+

PEMT 5465G>A +/+

BCO1 R267S +/+

MTHFR C677T +/+



MTHF

(c) 2017: Dr BenLynch

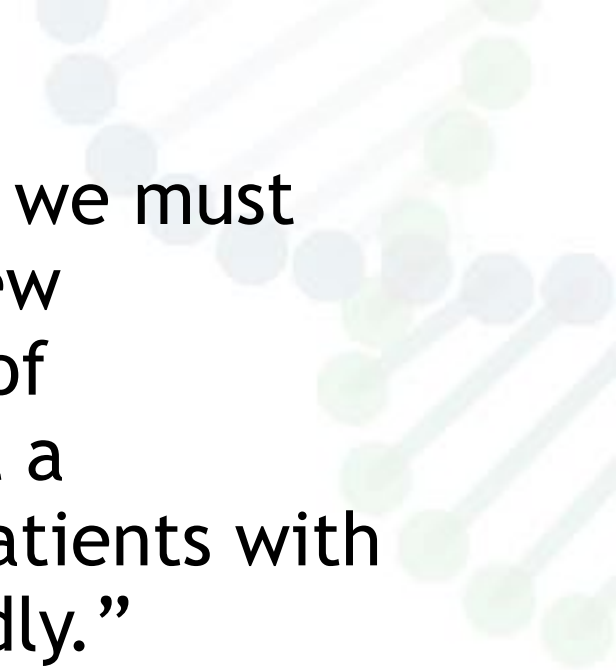
COMT V158M +/+



HydroxoB12

(c) 2017: Dr BenLynch

REDUCTIONISM



“If we are intellectually honest, we must discard old ideas and look for new paradigms to explain the cause of symptoms in a disease if we test a rationally designed therapy in patients with the disease, but it fails repeatedly.”

Dr. Anthony Linnane

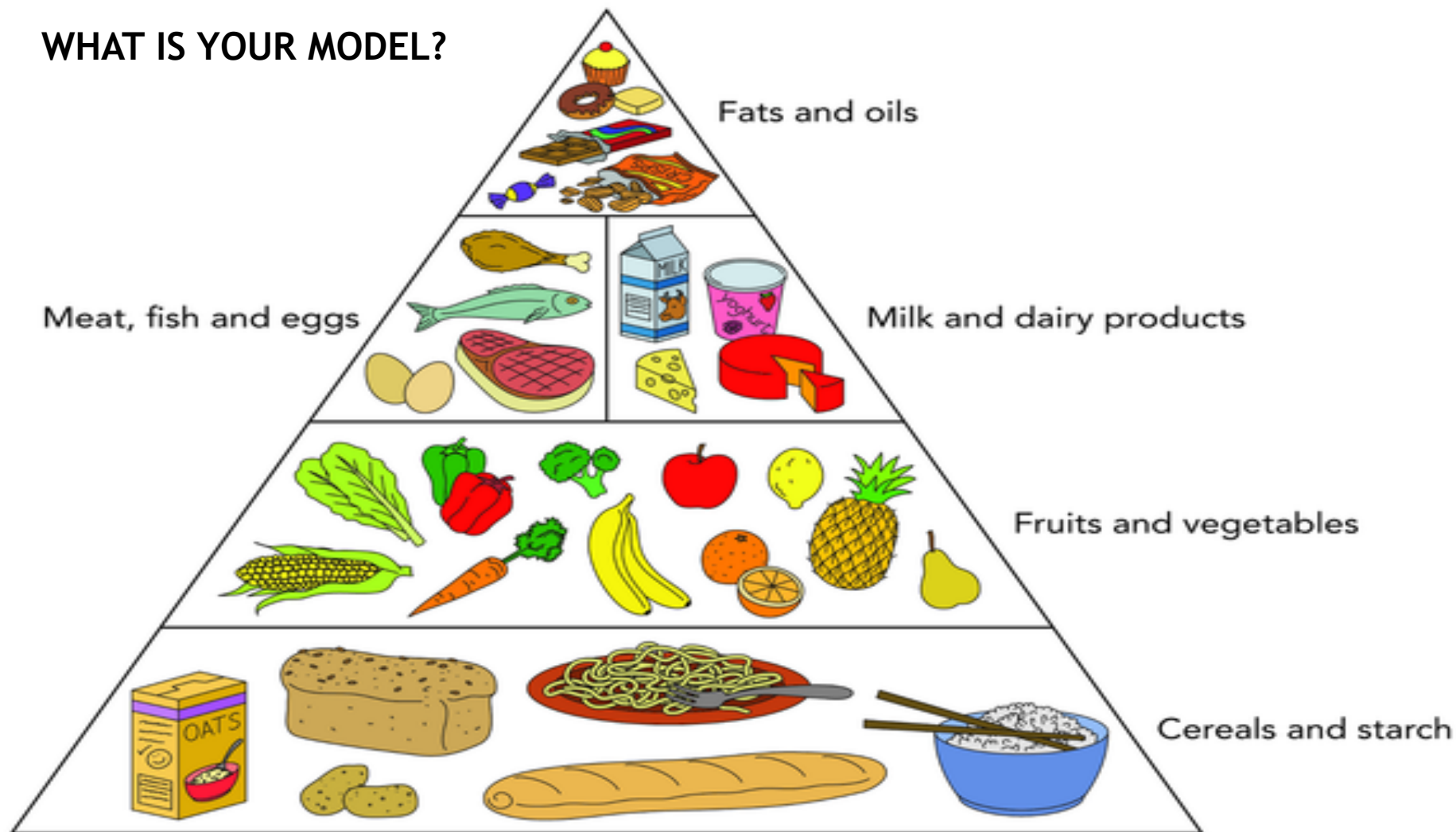


Cell danger response, Naviaux

(c) 2017: Dr BenLynch

experiences is stored. It's true that we start life with the gift of our genes, but it's also true that we become capable through the learning and development of mental models that enable us to reason, solve, and create. In other words, the elements that shape your intellectual abilities lie to a surprising extent within your own control. Understanding that this is so enables you to see failure as a badge of effort and a source of useful information—the need to dig deeper or to try a different strategy. The need to understand that when learning is hard, you're doing important work. To understand that striving and setbacks, as in any action video game or new BMX

WHAT IS YOUR MODEL?



Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Neurotransmitter Levels	rs1880	COMT	G	AG: 1/2	48.2071%	Degrades catecholamines: Pheae II, inactivates hydroxy-estrogens	Slower breakdown dopamine, noreadrogen, worrier, prone to anxiety, more sensitive to green tea	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors, Cannabis
Neurotransmitter Levels	rs6323	MAO-A	G	TT: 2/2	N/A	Oxidizes serotonin, dopamine, epinephrine, norepinephrine	Lower expression of MAO A	Progesterone	Curcumin, Estrogens, Androgens
Folate One-Carbon Metabolism / Methylation (FOCM)	rs651952	BHMT08	T	CT: 1/2	48.0752%	Methylates homocysteine to methionine	Downregulation	Phosphatidylcholine, TMG, Phosphatidylserine, Zinc	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs234703	CBS	G	AG: 1/2	39.9433%	Adds lysine to homocysteine to produce N-acetylmethionine	Increased responsiveness to homocysteine-lowering effects of folic acid. May rally increased disposal of homocysteine.	Vitamin B6	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1805087	MTR	A	GG: 2/2	4.70550%	Converts homocysteine into methionine	Upregulation that can deplete methyl-B12	Methyl-B12, L-methylfolate, Lithium orotate, Gnapthod extract	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1802059	MTRR	G	AA: 2/2	0.58110%	Methylates, recycles vitamin B12	Less active enzyme	Methyl-B12	

ARE YOU USING THE RIGHT MODEL?

CLINICALLY IRRELEVANT. CAUSING CONFUSION. LOST TIME. WRONG TURNS.

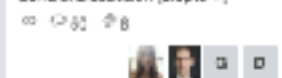
GAD1 C10180T	T	TT	+/+
GAD1 C14541T	T	CT	+/-
GAD1 C2627A	A	AC	+/-
GAD1 C34281T	T	CT	+/-
GAD1 G25509C	C	CG	+/-
GAD1 G39901A	G	GG	+/+
GAD1 G3992T	G	GT	+/-
GAD1 G5276A	G	GG	+/+
GAD1 T21922C	T	TT	+/+
GAD1 T30473C	C	CT	+/-

experiences is stored. It's true that we start life with the gift of our genes, but it's also true that we become capable through the learning and development of mental models that enable us to reason, solve, and create. In other words, the elements that shape your intellectual abilities lie to a surprising extent within your own control. Understanding that this is so enables you to see failure as a badge of effort and a source of useful information—the need to dig deeper or to try a different strategy. The need to understand that when learning is hard, you're doing important work. To understand that striving and setbacks, as in any action video game or new BMX

Slc6p1r1



General Discussion (Slc6p1r1)

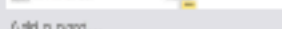
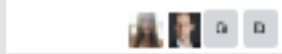


Gene	Score	Rank	Pathway
Slc6p1r1	1.0	1	Slc6p1r1 pathway
Slc6p1r1	0.9	2	Slc6p1r1 pathway
Slc6p1r1	0.8	3	Slc6p1r1 pathway
Slc6p1r1	0.7	4	Slc6p1r1 pathway
Slc6p1r1	0.6	5	Slc6p1r1 pathway
Slc6p1r1	0.5	6	Slc6p1r1 pathway
Slc6p1r1	0.4	7	Slc6p1r1 pathway
Slc6p1r1	0.3	8	Slc6p1r1 pathway
Slc6p1r1	0.2	9	Slc6p1r1 pathway
Slc6p1r1	0.1	10	Slc6p1r1 pathway

Groups of important genes close to Slc6p1r1 pathway



QPCR and ChIP



Genes that are multiple Pathways



General Discussion (Slc6p1r1)

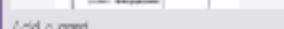


Gene	Score	Rank	Pathway
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Slc6p1r1	0.8	3	Slc6p1r1 pathway
Slc6p1r1	0.7	4	Slc6p1r1 pathway
Slc6p1r1	0.6	5	Slc6p1r1 pathway
Slc6p1r1	0.5	6	Slc6p1r1 pathway
Slc6p1r1	0.4	7	Slc6p1r1 pathway
Slc6p1r1	0.3	8	Slc6p1r1 pathway
Slc6p1r1	0.2	9	Slc6p1r1 pathway
Slc6p1r1	0.1	10	Slc6p1r1 pathway

Groups of important genes close to Slc6p1r1 pathway



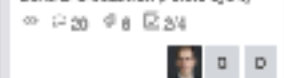
QPCR and ChIP



Folate



General Discussion (Folate cycle)

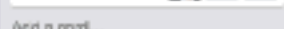


Gene	Score	Rank	Pathway
Slc6p1r1	1.0	1	Slc6p1r1 pathway
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Slc6p1r1	0.8	3	Slc6p1r1 pathway
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Slc6p1r1	0.5	6	Slc6p1r1 pathway
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Slc6p1r1	0.3	8	Slc6p1r1 pathway
Slc6p1r1	0.2	9	Slc6p1r1 pathway
Slc6p1r1	0.1	10	Slc6p1r1 pathway

Groups of important genes close to Slc6p1r1 pathway



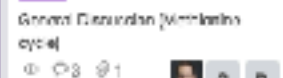
QPCR and ChIP



Methionine



General Discussion (Methionine cycle)

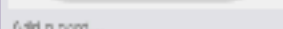


Gene	Score	Rank	Pathway
Slc6p1r1	1.0	1	Slc6p1r1 pathway
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Slc6p1r1	0.8	3	Slc6p1r1 pathway
Slc6p1r1	0.7	4	Slc6p1r1 pathway
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Slc6p1r1	0.2	9	Slc6p1r1 pathway
Slc6p1r1	0.1	10	Slc6p1r1 pathway

Groups of important genes close to Slc6p1r1 pathway



QPCR and ChIP



Transamination, new genes



General Discussion (Transamination cycle)

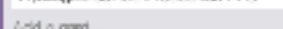


Gene	Score	Rank	Pathway
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Slc6p1r1	0.8	3	Slc6p1r1 pathway
Slc6p1r1	0.7	4	Slc6p1r1 pathway
Slc6p1r1	0.6	5	Slc6p1r1 pathway
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Slc6p1r1	0.3	8	Slc6p1r1 pathway
Slc6p1r1	0.2	9	Slc6p1r1 pathway
Slc6p1r1	0.1	10	Slc6p1r1 pathway

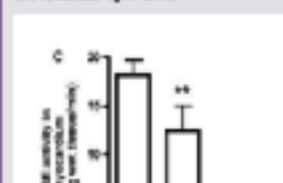
Groups of important genes close to Slc6p1r1 pathway



QPCR and ChIP



Glutathione synthesis

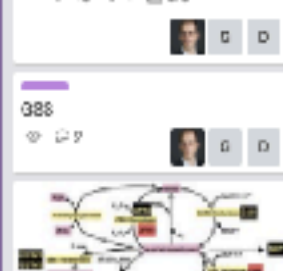


General Discussion (Glutathione synthesis cycle)

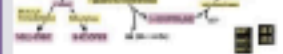
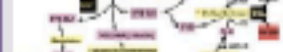


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Slc6p1r1	0.7	4	Slc6p1r1 pathway
Slc6p1r1	0.6	5	Slc6p1r1 pathway
Slc6p1r1	0.5	6	Slc6p1r1 pathway
Slc6p1r1	0.4	7	Slc6p1r1 pathway
Slc6p1r1	0.3	8	Slc6p1r1 pathway
Slc6p1r1	0.2	9	Slc6p1r1 pathway
Slc6p1r1	0.1	10	Slc6p1r1 pathway

Groups of important genes close to Slc6p1r1 pathway



QPCR and ChIP



WE MUST CHALLENGE WHAT IS COMMONLY ACCEPTED

CLINICALLY RELEVANT. EFFECTIVE MEDICINE.

@drbenlynch PS, I just attached Howe2015, a more recent paper that did a metaanalysis of all the anxiety pathway genes, including GAD1/2, and the only snps that passed were:

TMEM132D

rs7370927 (T allele: odds ratio (OR) = 1.27, 95% con

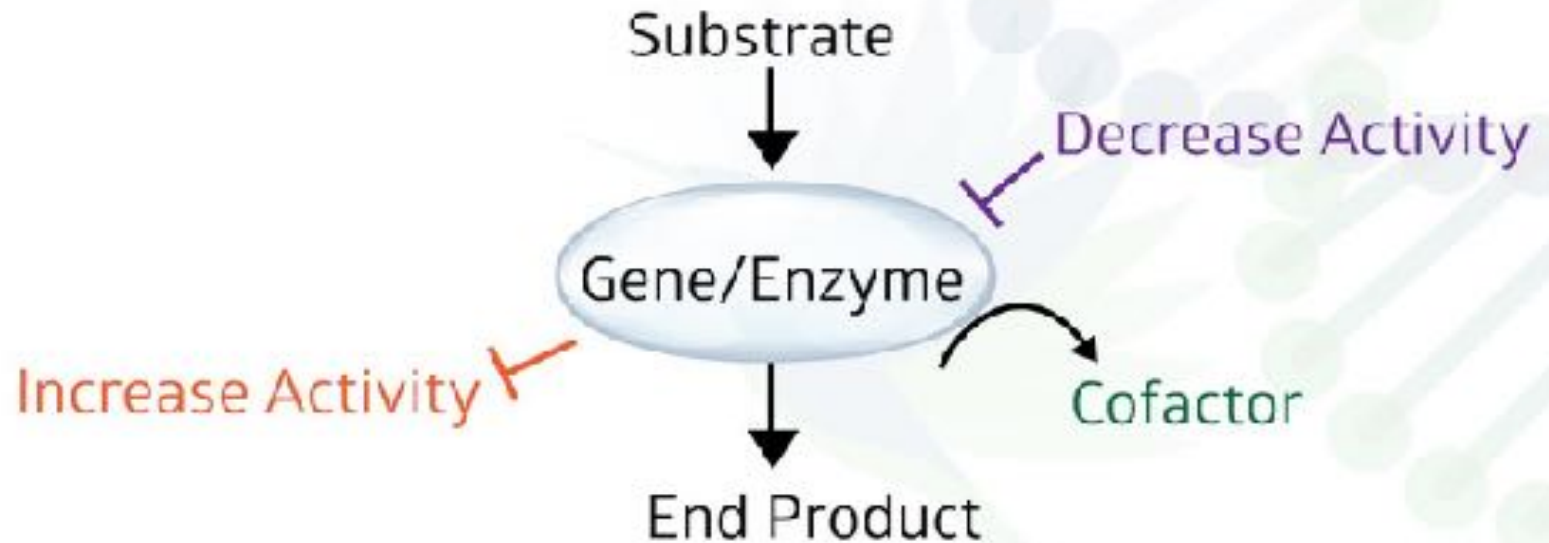
rs11060369 (CC genotype: OR = 0.65, 95% CI: 0.53

COMT

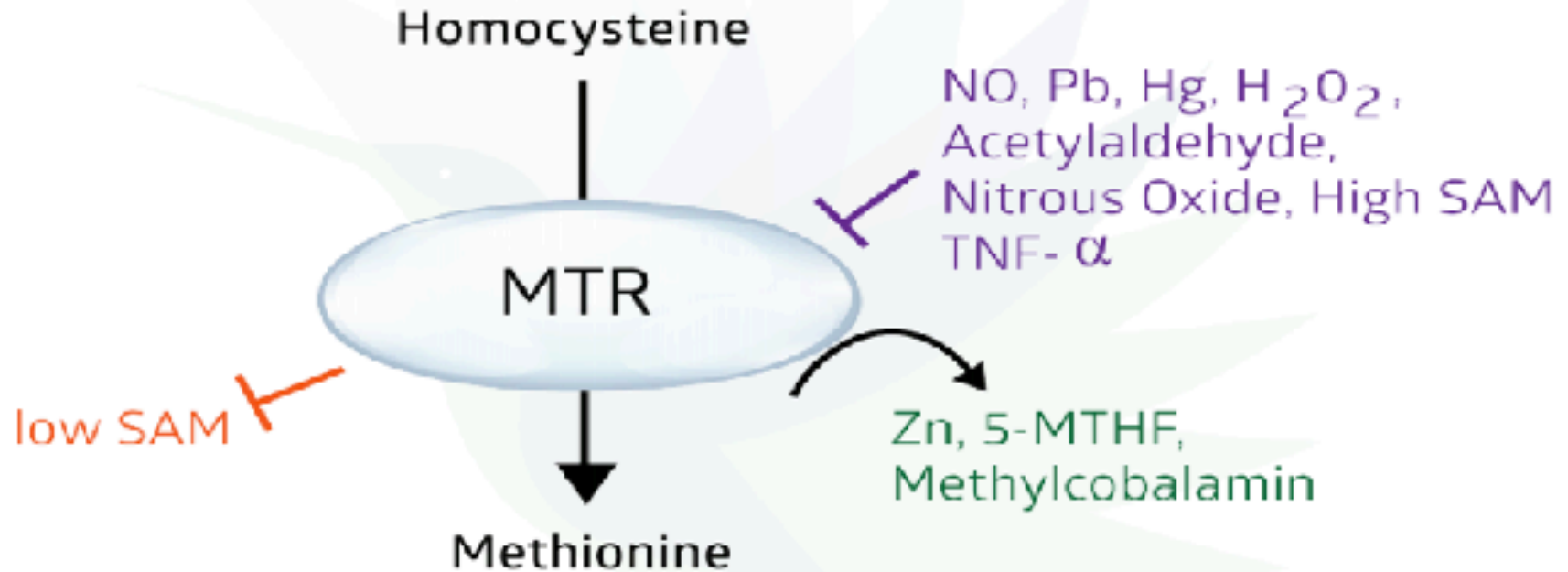
rs4680

GAD snps did not make it either.

ASSEMBLING THE RIGHT MODEL BEGINS WITH A HEALTHY FOUNDATION



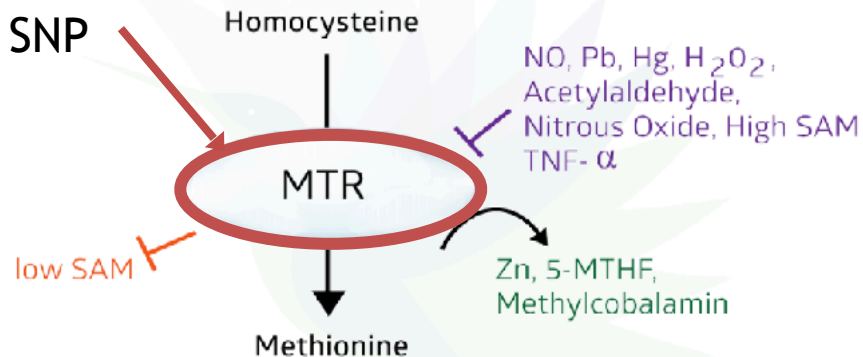
APPLYING THE MODEL



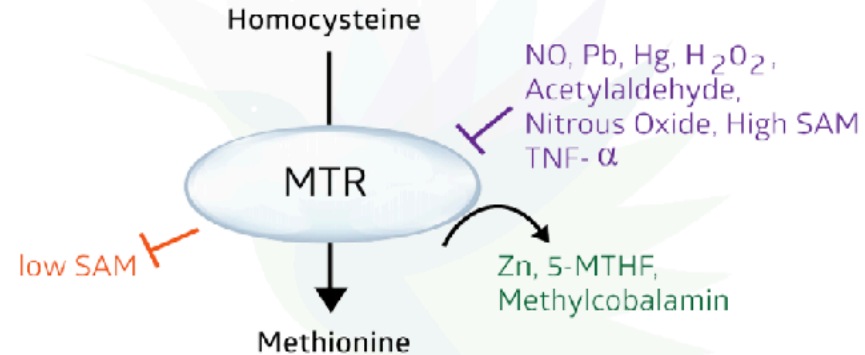
EXPANDING THE MODEL - A Dirty Gene

BORN DIRTY
(some people)

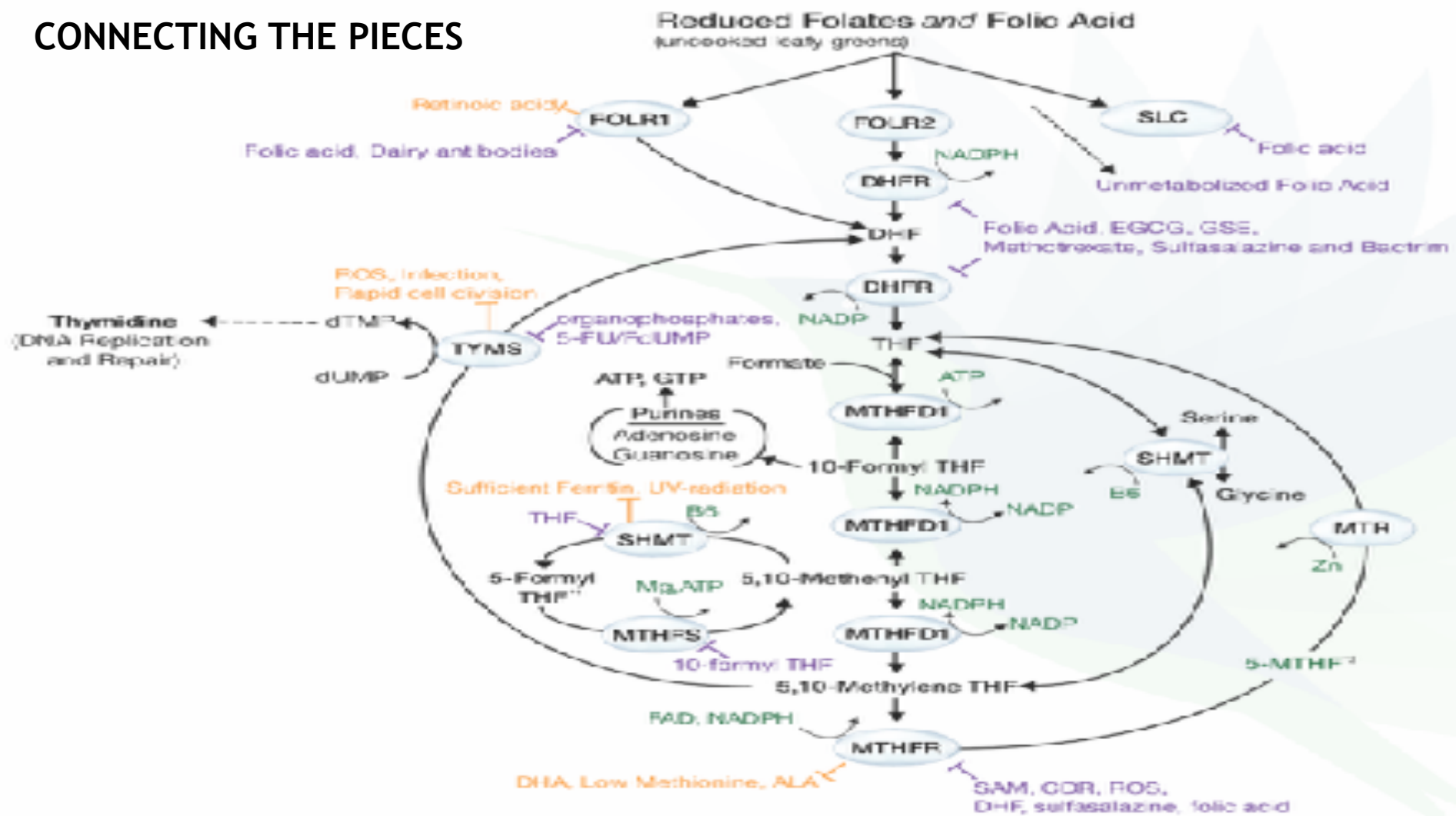
RELEVANT
SNP



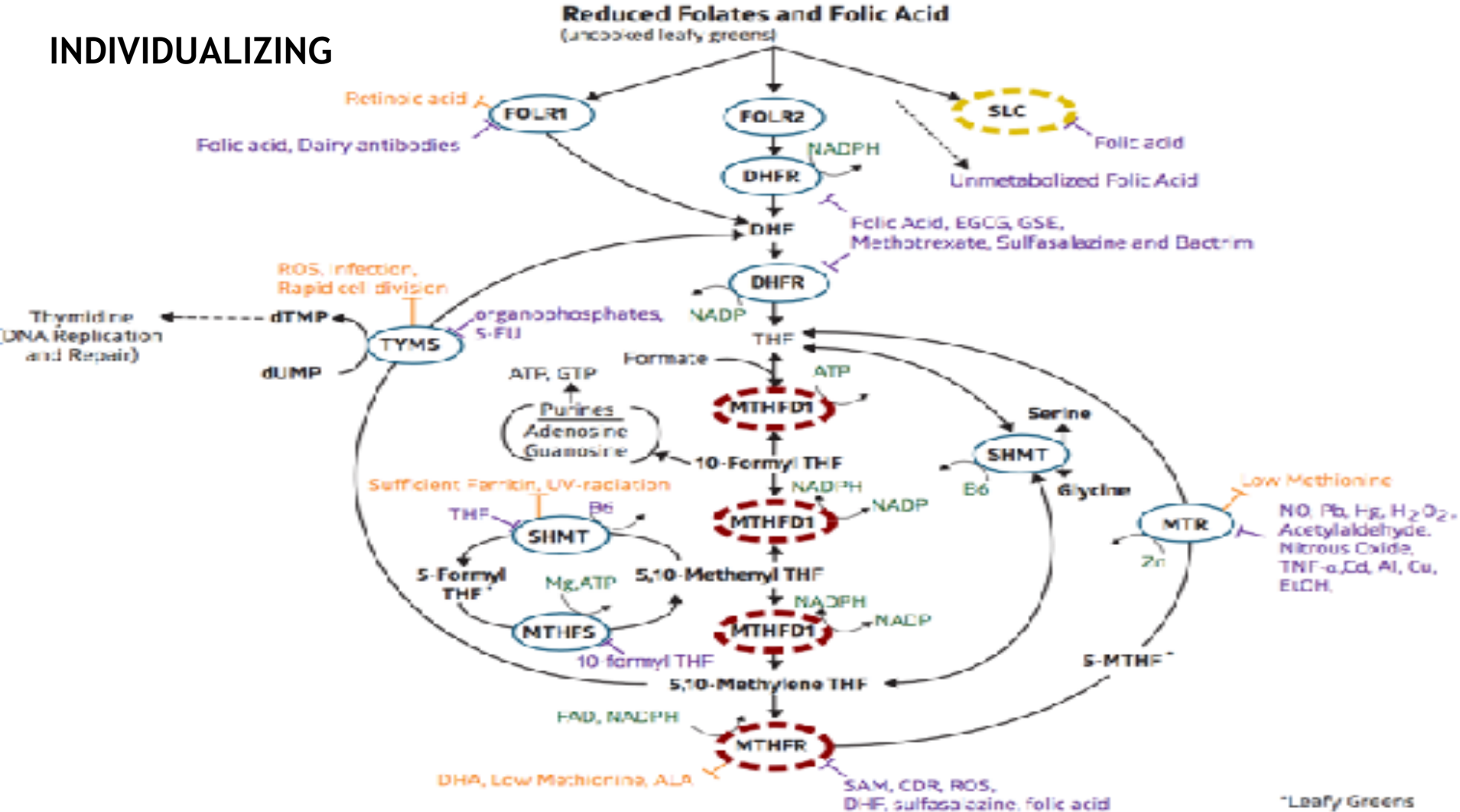
BECAME DIRTY
(most people)



CONNECTING THE PIECES

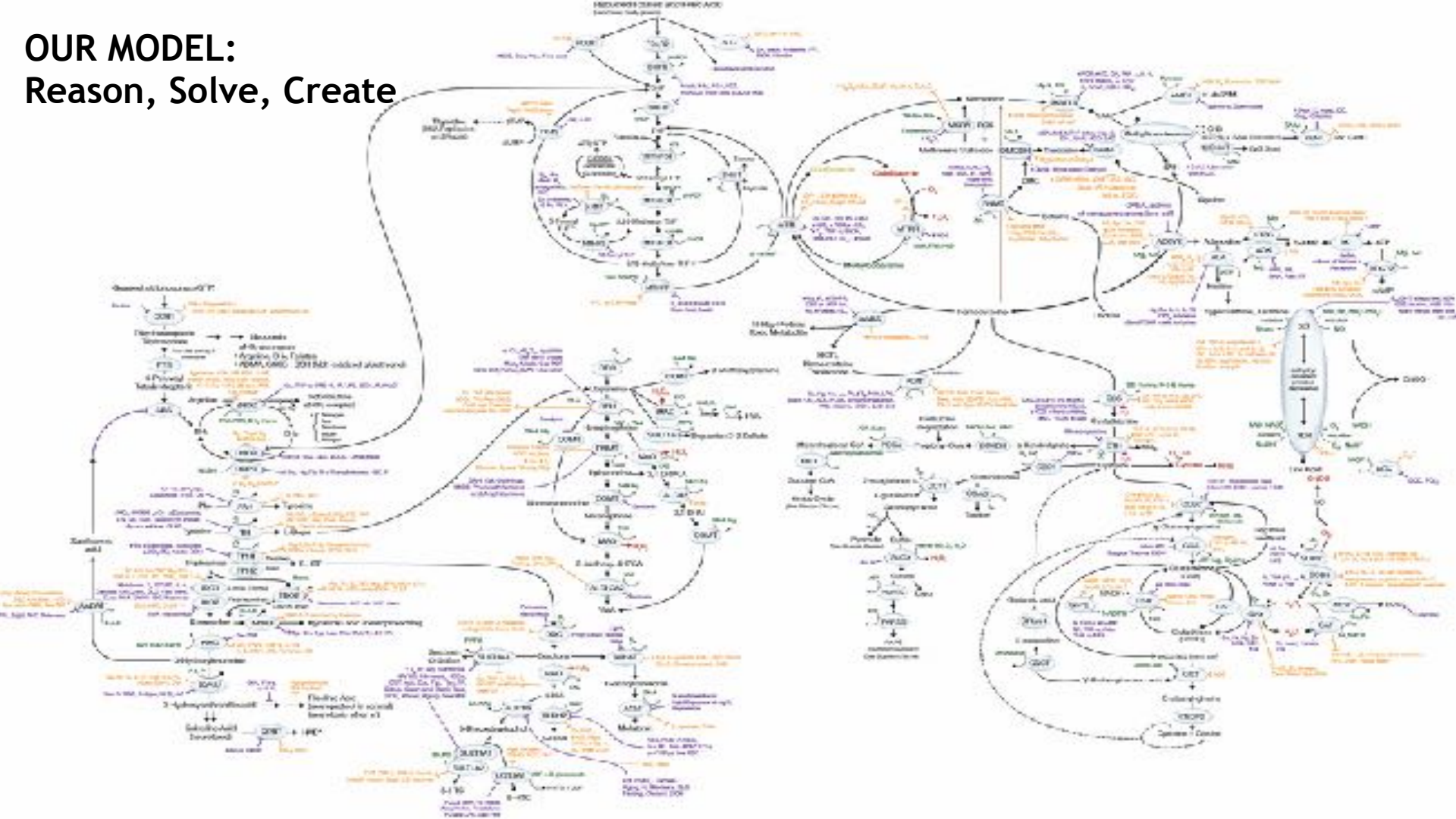


INDIVIDUALIZING



experiences is stored. It's true that we start life with the gift of our genes, but it's also true that we become capable through the learning and development of mental models that enable us to reason, solve, and create. In other words, the elements that shape your intellectual abilities lie to a surprising extent within your own control. Understanding that this is so enables you to see failure as a badge of effort and a source of useful information—the need to dig deeper or to try a different strategy. The need to understand that when learning is hard, you're doing important work. To understand that striving and setbacks, as in any action video game or new BMX

OUR MODEL: Reason, Solve, Create





WHY??

EVERYONE IS
DIFFERENT





STRATEGIC MEDICINE

Practical

Alignment

Foundation

Timeline



Logical

Plot

Response

Trigger

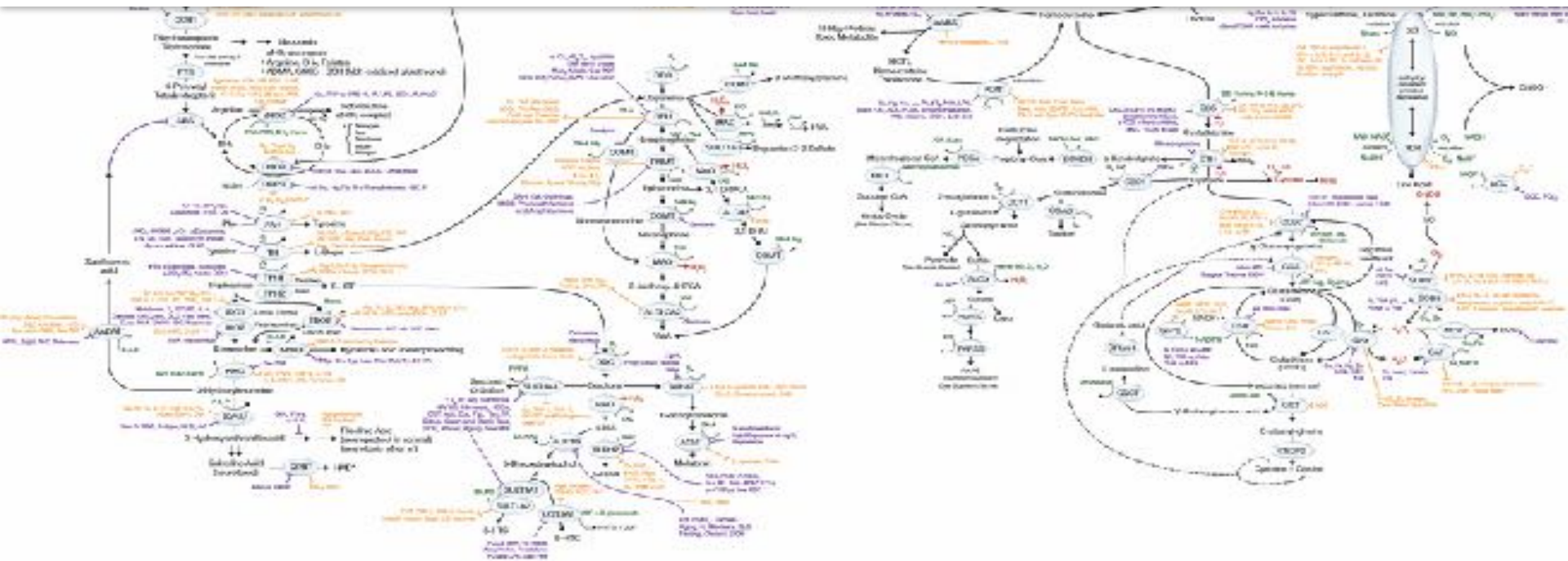


Strategic

Plan

Docere

Pulse



Practical

Alignment

Foundation

Timeline



Logical

Plot

Response

Trigger



Strategic

Plan

Docere

Pulse

Palliate or Resolve?

Practical

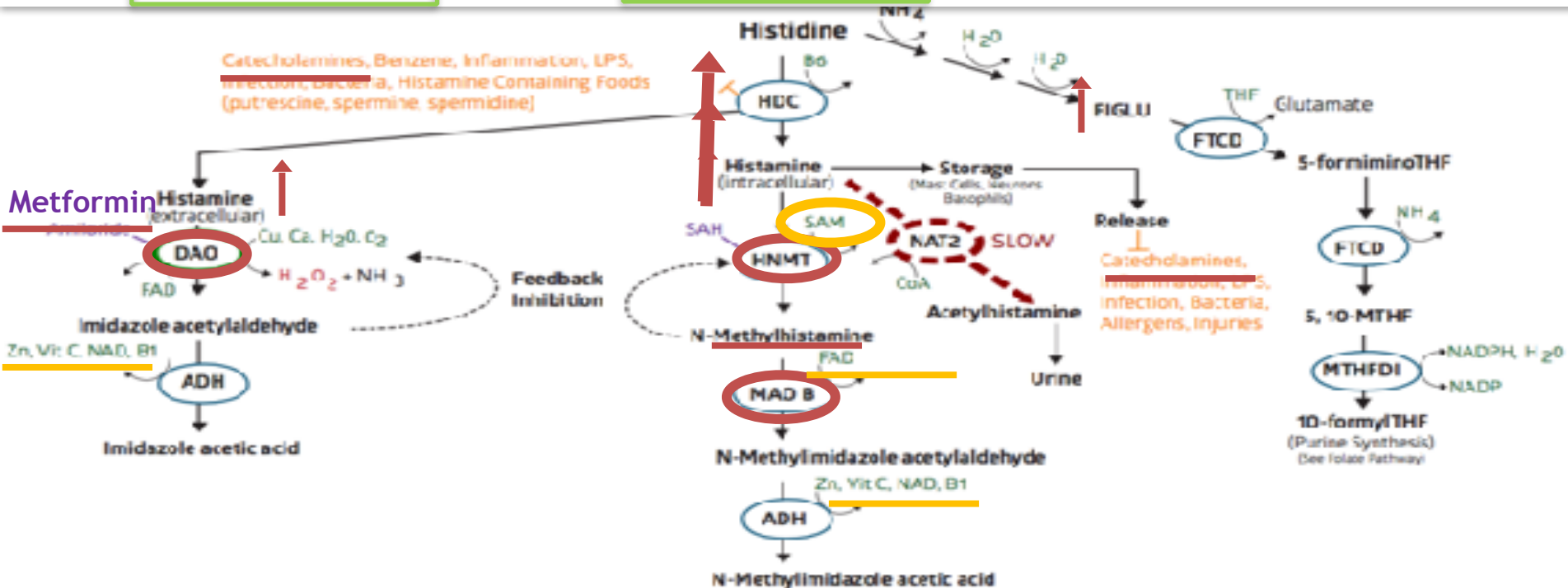
Alignment
Foundations
Timeline

Logical

Plot
Response
Trigger

Strategic

Plan
Docere
Pulse



Plan

Timeline

Cell danger response – work with it

Foundation work

Remove

Tracking

Follow up schedule

Spot Cleaning: SNPs

Docere

Online education

Expectations

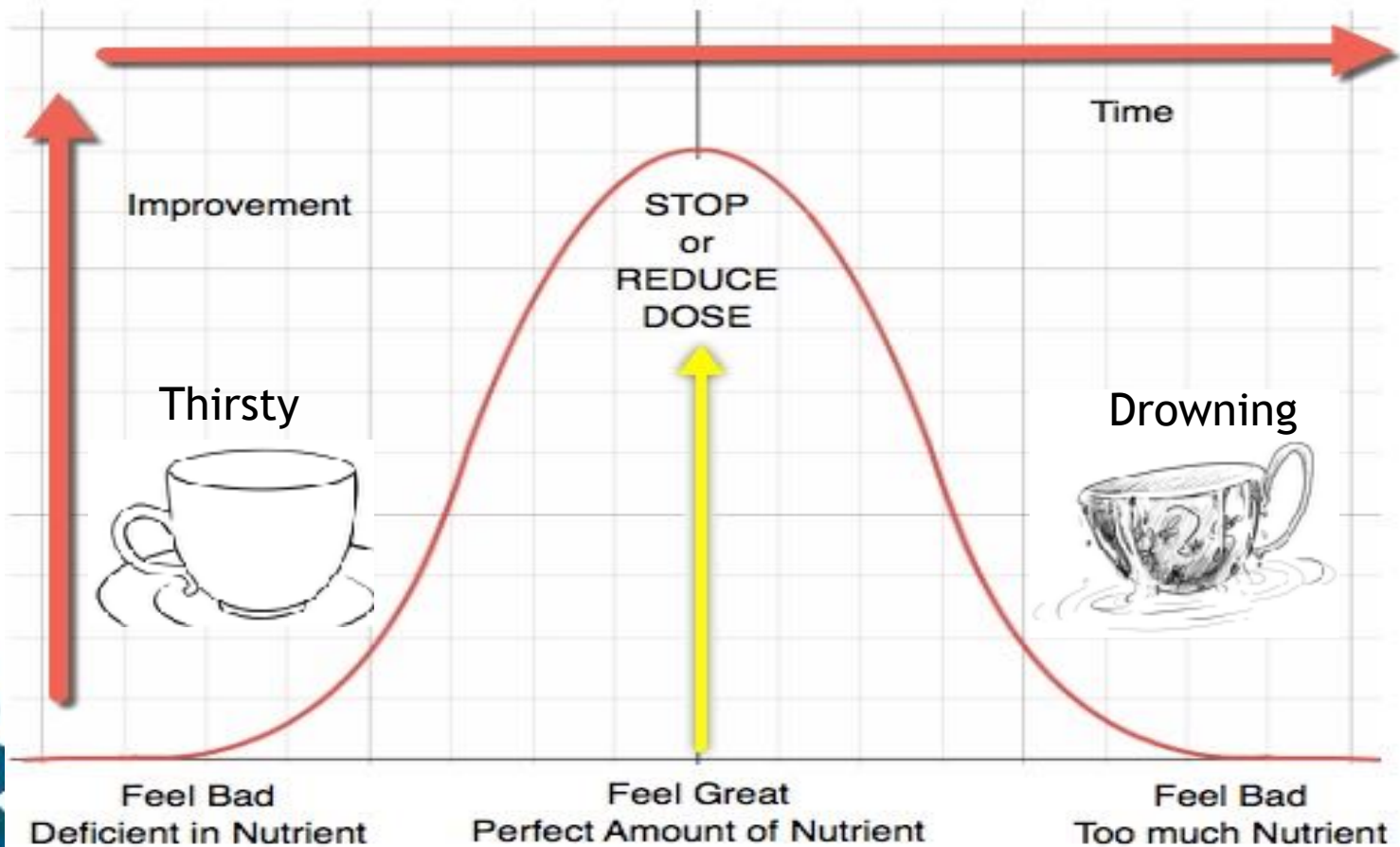
Foundation Support

Empowerment

Resources

Pulse Method

The Pulse Method



Practical

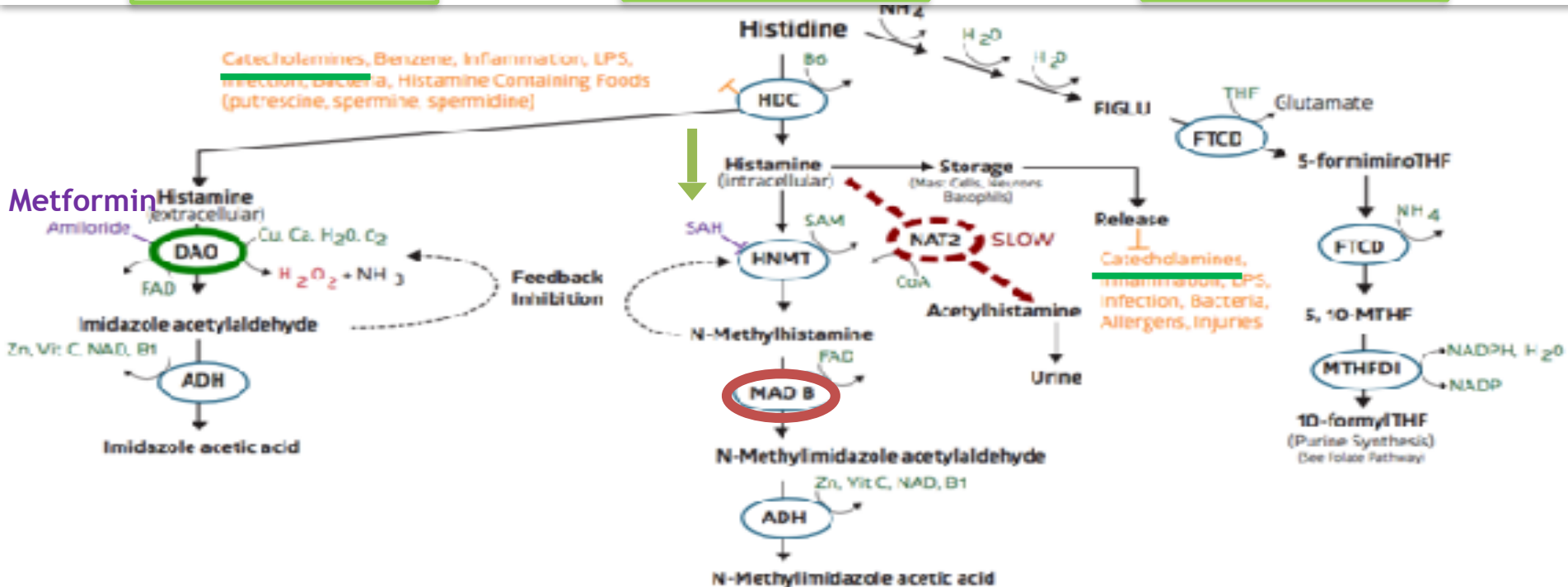
Alignment
Foundations
Timeline

Logical

Plot
Response
Trigger

Strategic

Plan
Docere
Pulse



Practical

Easy

Fast

~~Memorization~~

Logical

Look

Understand

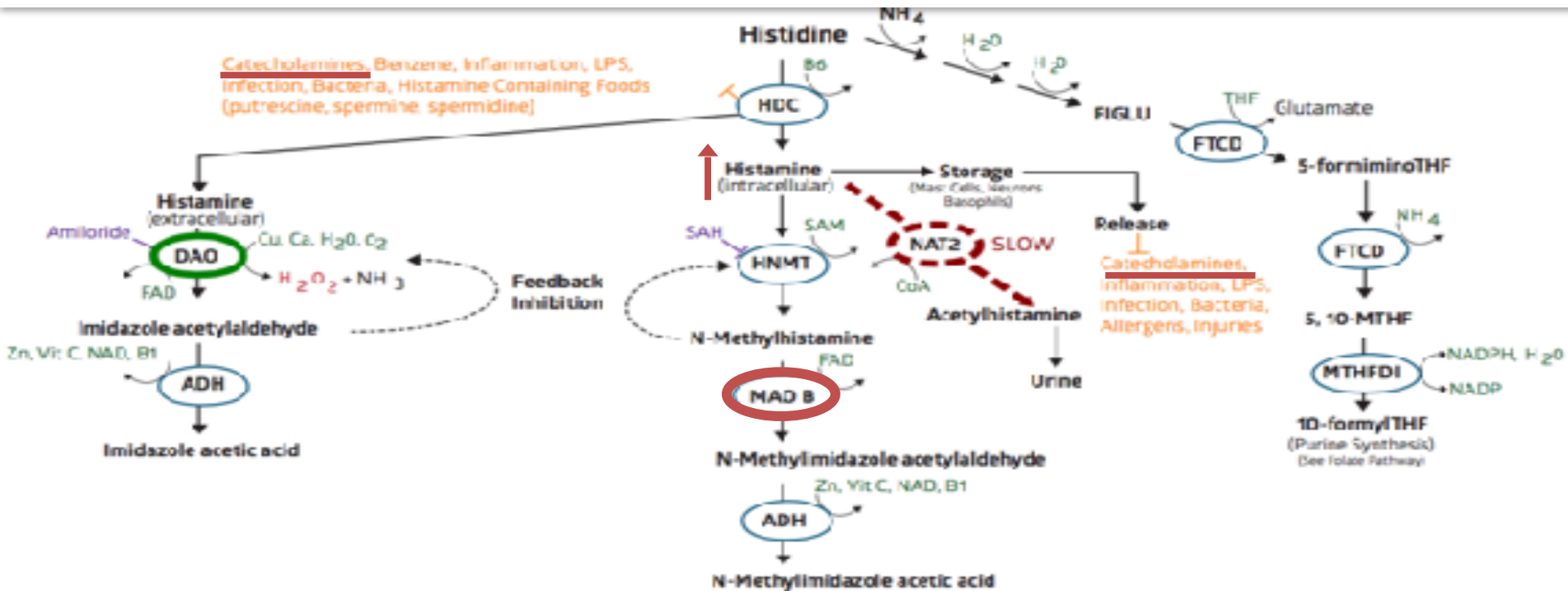
Why

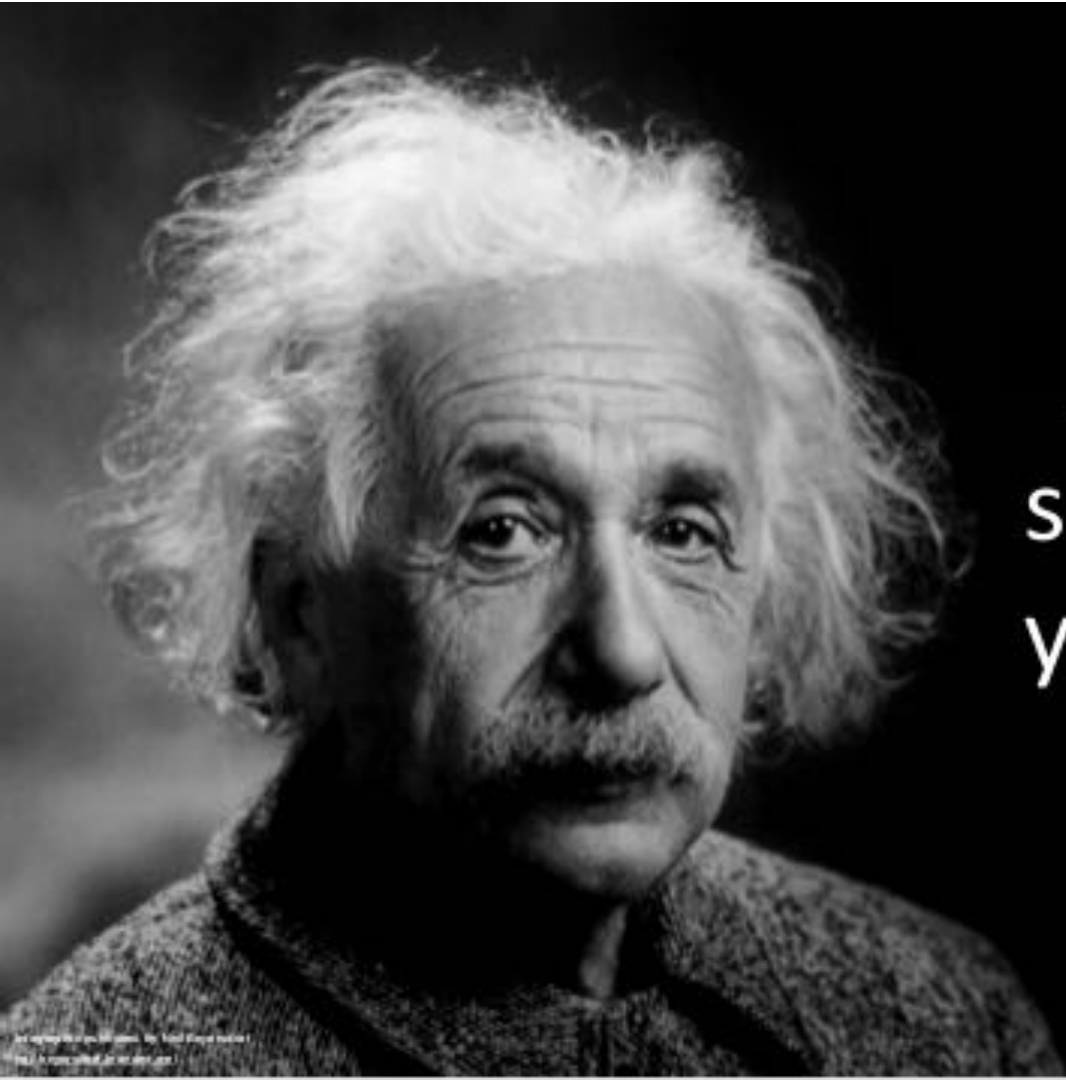
Strategic

Plan

Compliance

Holism





Never memorize
something that
you can look up.”

Albert Einstein

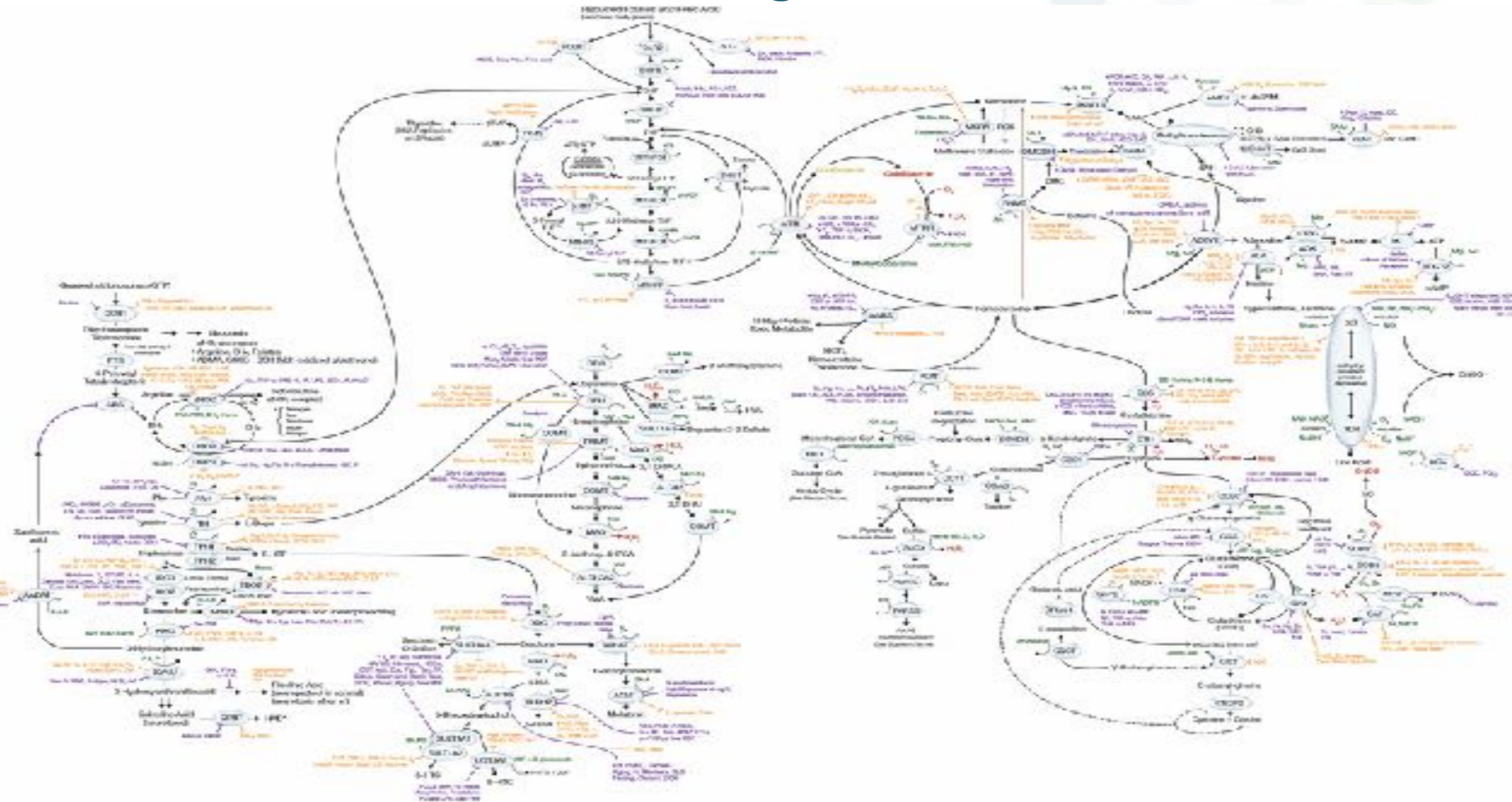
base coach
together seamlessly: the batter connects with the ball and drives it through a hole in the outfield, buying the time to get on first and advance his men. Because he has culled out all but the most important elements for identifying and responding to each kind of pitch, constructed mental models out of that learning, and connected those models to his mastery of the other essential elements of this complex game, an expert player has a better chance of scoring runs than a less experienced one who cannot make sense of the vast and changeable information he faces every time he steps up to the plate.

pathway
planner's

new computer pt

Many people believe that their intellectual ability is hard-wired from birth, and that failure to meet a learning challenge is an indictment of their intellectual ability.

Welcome to Strategic Medicine



References

All papers shown in presentation are published in PubMed and cited

All books demonstrated here are cited:
Make it Stick

All diagrams shown have references organized by pathway and gene.

References may be found here:
<https://seekinghealth.org/bibliography/>