CONGRESSO INTERNACIONAL
NUTRIÇÃO INTEGRATIVA FUNCIONAL

2025

22/11/25

O LGS Protocol:
Curso Introdutorio

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www.spims.org

Introdução: Em que consiste o Protocolo LGS?

O Protocolo LGS é uma metodologia desenvolvida com a finalidade tratar raiz causa de:

- Doenças Autoimunes
- Síndrome Metabólica
- Câncer (Cancro)

Modulação do Microbioma

Modulação do Sistema Imune

Compensação Epigenética

Ja temos profissionais de varios paises atuando com o Protocolo

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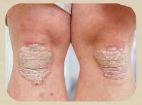
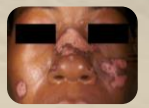
CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

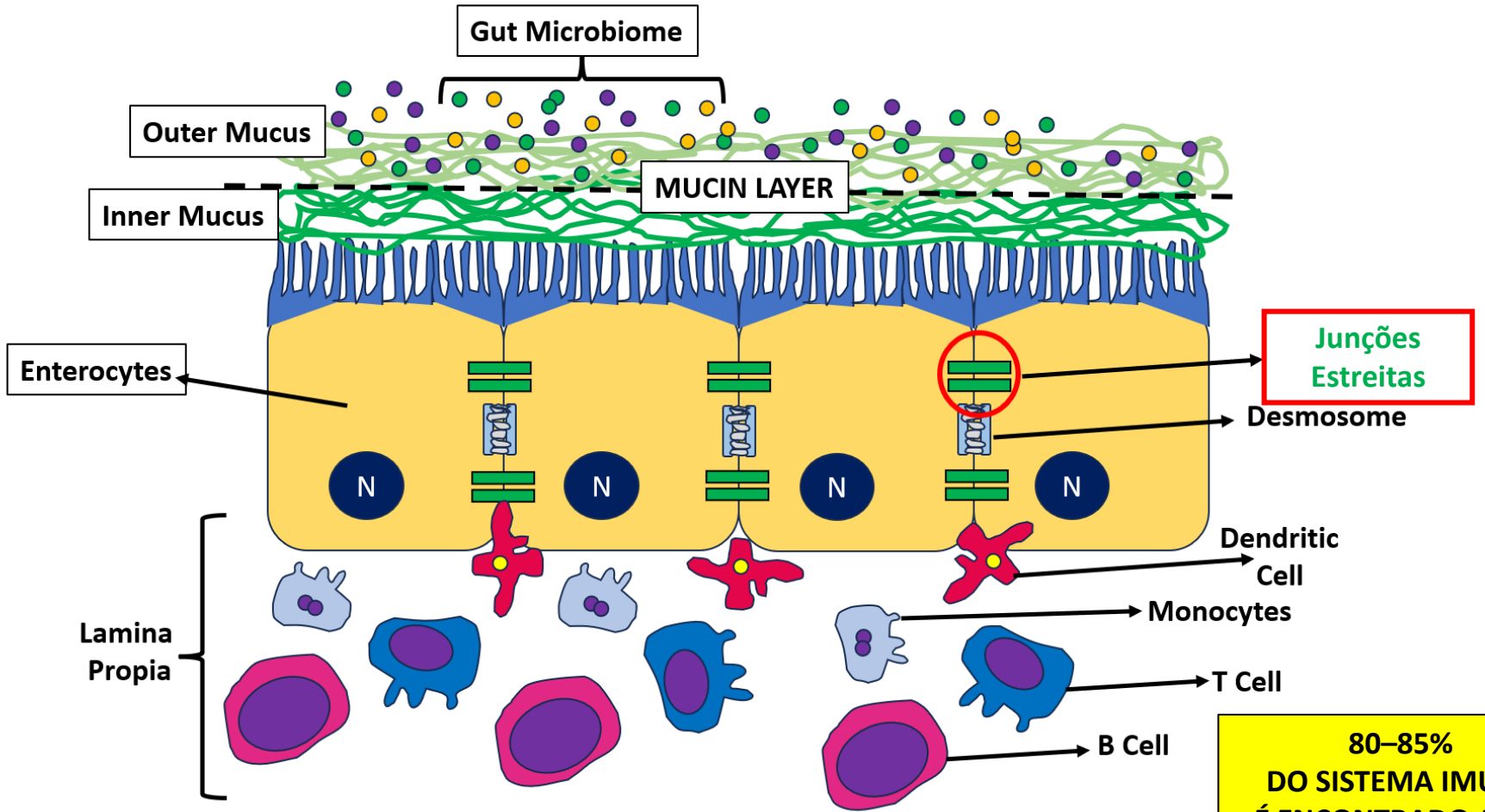
THE LGS PROTOCOL
THE LEAKY GUT SYNDORME PROTOCOL

Dr. Eduardo Beltran

A Barreira GI/ Mucina:







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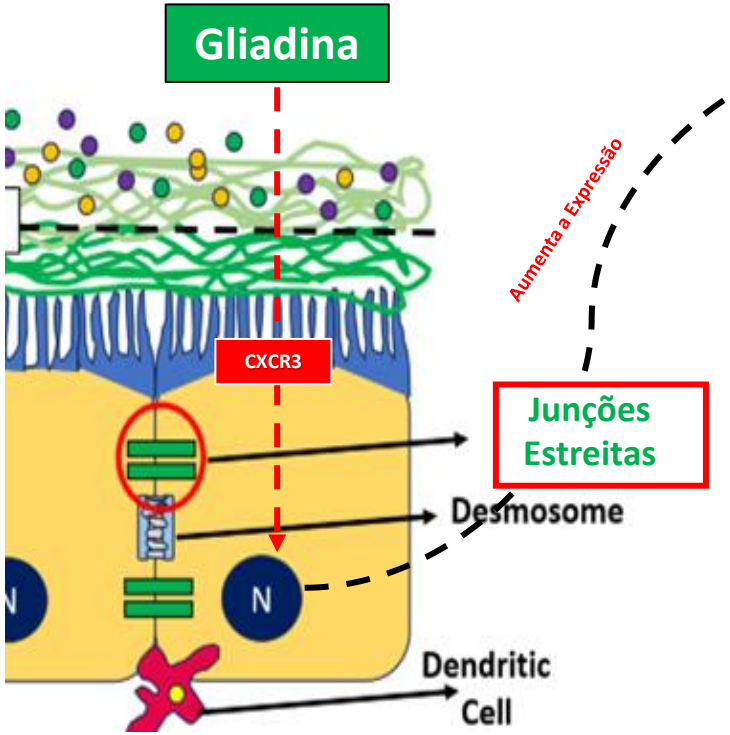
Dr. Eduardo Beltran

Glifosato

Lectinas

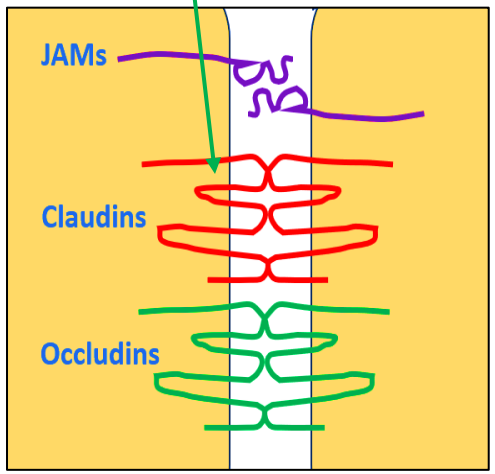
TRIGO

LPS's



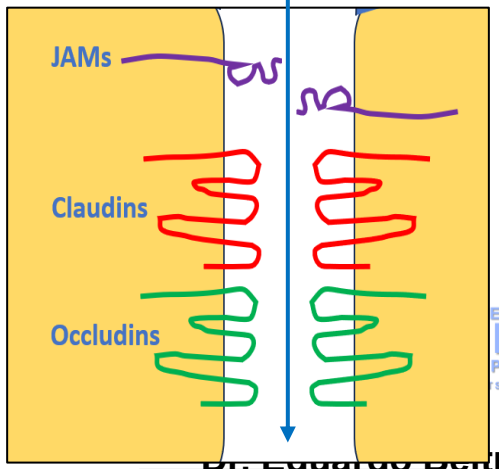
Aumenta a Expressão

Zonulina



Junções Estreitas Normais

Aumento da Permeabilidade



Junções Estreitas Separadas

International Journal of *Molecular Sciences*

MDPI

Article

Lifelong Exposure to a Low-Dose of the Glyphosate-Based Herbicide RoundUp® Causes Intestinal Damage, Gut Dysbiosis, and Behavioral Changes in Mice

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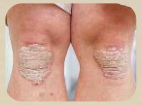
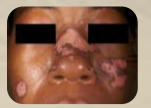
Exames usados no Protooclo LGS:





Diagnostic Solutions laboratory

5934 Shiloh Rd, Ste 101 | Alpharetta GA 30005
877.485.5336

Patient: Ima Sample
Collected: 08/02/2022
DOB: 07/11/1981
Gender: M

Accession: 00000000-0001
Received: 08/3/2022
Completed: 8/17/2022
Ordered by: Diane Farhi, MD

GI-MAP
GI Microbial Assay Plus
DNA STOOL ANALYSIS BY QUANTITATIVE PCR

YOUR PERSONALIZED REPORT

PATHOGENS

The GI-MAP® includes pathogens (bacterial, parasitic and viral) commonly known to cause gastroenteritis. Note that not all individuals with positive findings will present with symptoms. Many factors, including the health of the individual (such as immune health, digestive function, and microbiome balance), the transient nature of most pathogens, and the presence and expression of virulence factors, all contribute to pathogen virulence and individual symptoms.

BACTERIAL PATHOGENS	Result		Reference
Campylobacter	< dl		< 1.00e3
C. difficile Toxin A	1.21e5	High ↑	< 1.00e3
C. difficile Toxin B	2.27e5	High ↑	< 1.00e3
Enterohemorrhagic E. coli	< dl		< 1.00e3
E. coli O157	< dl		< 1.00e3
Enteroinvasive *E. coli/Shigella*	< dl		< 1.00e2
Enterotoxigenic *E. coli* LT/ST	< dl		< 1.00e3
Shiga-like Toxin *E. coli* stx1	< dl		< 1.00e3
Shiga-like Toxin *E. coli* stx2	< dl		< 1.00e3
Salmonella	< dl		< 1.00e4
Vibrio cholerae	< dl		< 1.00e5
Yersinia enterocolitica	4.46e3		< 1.00e5
PARASITIC PATHOGENS			
Cryptosporidium	< dl		< 1.00e6
Entamoeba histolytica	< dl		< 1.00e4
Giardia	< dl		< 5.00e3
VIRAL PATHOGENS			
Adenovirus 40/41	< dl		< 1.00e10
Norovirus GI/II	< dl		< 1.00e7

KEY: Results are reported as genome equivalents per gram of stool, which is a standard method for estimating the number of microbes measured per gram of stool, based on qPCR analysis of DNA samples.

Results are expressed in standard scientific notation. For example, a reported result of 3.5e7 is equivalent to 3.5×10^7 microbes per gram, which equals 35,000,000 (35 million) microbes per gram of stool.

< dl represents results below detectable limit.

THE LGS PROTOCOL
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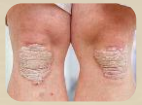
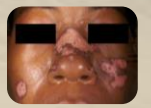
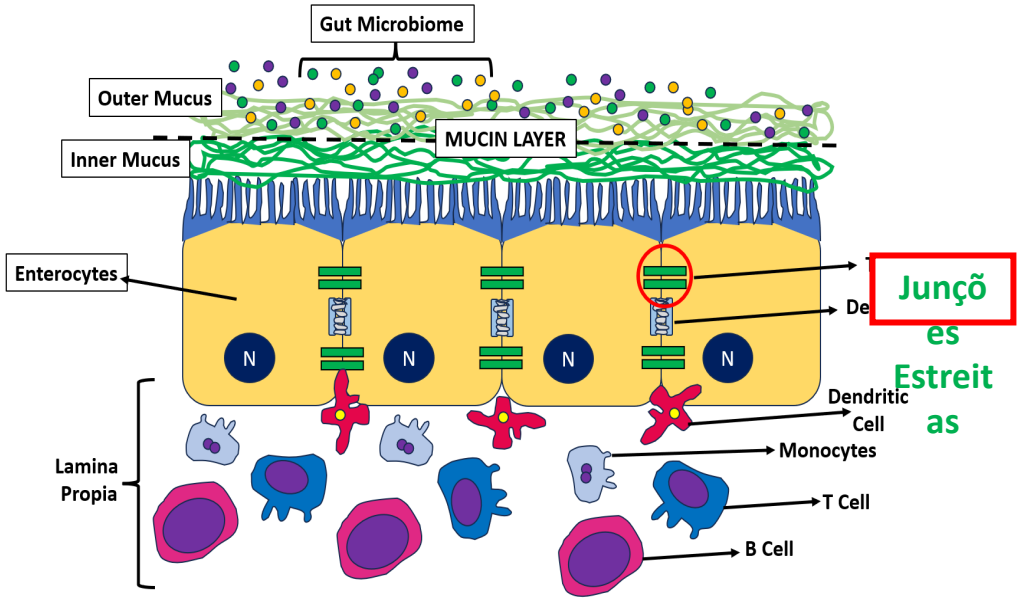




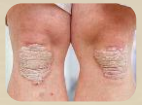
COMMENSAL/KEYSTONE BACTERIA

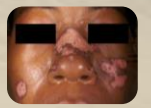
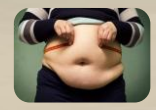
COMMENSAL BACTERIA	Result	Reference
Bacteroides fragilis	1.09e11	1.6e9 - 2.5e11
Bifidobacterium spp.	5.49e9	> 6.7e7
Enterococcus spp.	1.09e7	1.9e5 - 2.0e8
Escherichia spp.	5.57e8	3.7e6 - 3.8e9
Lactobacillus spp.	5.69e7	8.6e5 - 6.2e8
Enterobacter spp.	1.33e7	1.0e6 - 5.0e7
Akkermansia muciniphila	<dl L	1.0e1 - 8.2e6
Faecalibacterium prausnitzii	<dl L	1.0e3 - 5.0e8
Roseburia spp.	2.08e9	5.0e7 - 2.0e10
BACTERIAL PHYLA		
Bacteroidetes	2.41e12	8.6e11 - 3.3e12
Firmicutes	1.52e11	5.7e10 - 3.0e11
Firmicutes:Bacteroidetes Ratio	0.06	< 1.0



80–85%
DO SISTEMA IMUNE
É ENCONTRADO AQUI

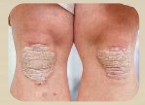
GI MAP

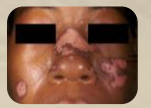


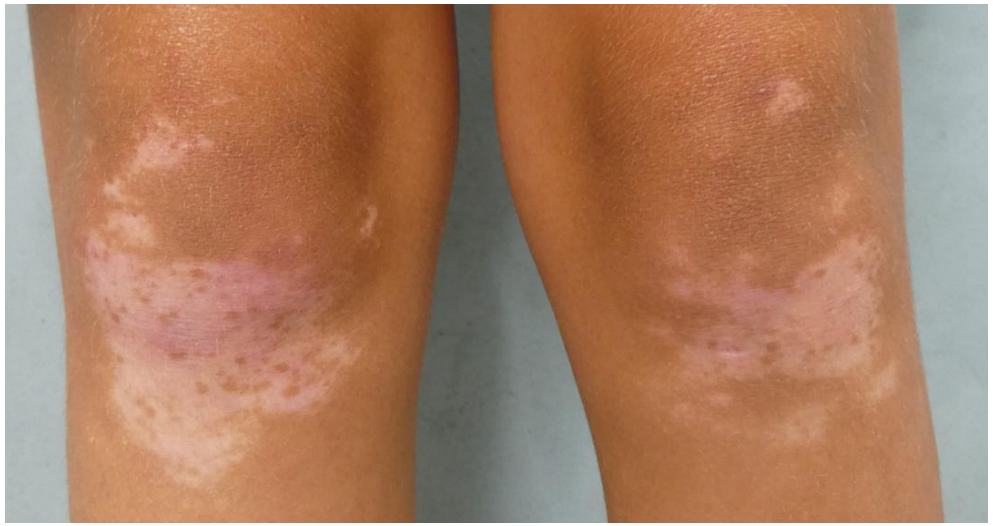



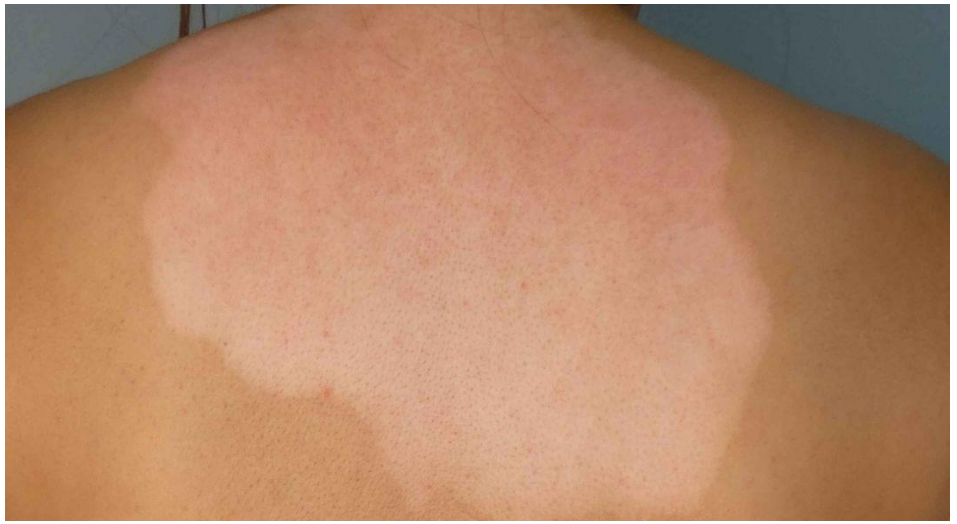

Ana L., 51 anos, relata **perda progressiva de pigmentação da pele** nas mãos, ao redor da boca, **nos joelhos, membros inferiores e principalmente na região das costas** ao longo dos últimos dez meses. Ela observa que as manchas são bem delimitadas e aumentam lentamente. Também refere fadiga aumentada e unhas frágeis. Paciente consultou na primeira semana de Setembro, 2024.

Paralelamente às alterações cutâneas, apresenta **sintomas gastrointestinais persistentes**, incluindo distensão abdominal, desconforto, excesso de gases e diarreia intermitente várias vezes por semana. Esses sintomas pioram após ingerir cebola, alho, feijão, pão, maçã ou leite. Ela também relata episódios de névoa mental durante as crises.









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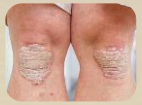

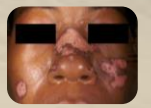

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5894 Shiloh Rd, Ste 101 | Alpharetta GA 30005
877.485.5336

Patient: [redacted]
Collected: 9/6/2024
DOB: 6/18/1974

Accession: [redacted]
Received: 9/10/2024
Completed: 10/1/2024
Ordered by: [redacted]

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Norovirus GI/II	<dl		< 1.00e7

HELICOBACTER PYLORI

H. PYLORI & VIRULENCE FACTORS	Result		Reference
Helicobacter pylori	4.38e3	High ↑	< 1.00e3
Virulence Factor, babA	Negative		Negative
Virulence Factor, cagA	Negative		Negative
Virulence Factor, dupA	Negative		Negative
Virulence Factor, iceA	Negative		Negative
Virulence Factor, oipA	Negative		Negative
Virulence Factor, vacA	Negative		Negative
Virulence Factor, virB	Negative		Negative
Virulence Factor, virD	Negative		Negative

H. PYLORI ANTIBIOTIC RESISTANCE GENES

	Result	Reference
Amoxicillin	**Negative**	**Negative**
Genes associated with amoxicillin resistance		
PBP1A S414R	Absent	
PBP1A T556S	Absent	
PBP1A N562Y	Absent	

	Result	Reference
Clarithromycin	**Negative**	**Negative**
Genes associated with clarithromycin resistance		
A2142C	Absent	
A2142G	Absent	
A2143G	Absent	

	Result	Reference
Fluoroquinolones	**Negative**	**Negative**
Genes associated with fluoroquinolone resistance		
gyrA N87K	Absent	
gyrA D91N	Absent	
gyrA D91G	Absent	
gyrB S479N	Absent	
gyrB R484K	Absent	

	Result	Reference
Tetracycline	**Negative**	**Negative**
Genes associated with tetracycline resistance		
A926G	Absent	
AGA926-928TTC	Absent	

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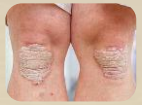
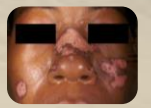
Dr. Eduardo Beltran

GI MAP





OPPORTUNISTIC/OVERGROWTH MICROBES

DYSBIOTIC & OVERGROWTH BACTERIA	Result		Reference
Bacillus spp.	4.48e5		< 1.76e6
Enterococcus faecalis	<dl		< 1.00e4
Enterococcus faecium	<dl		< 1.00e4
Morganella spp.	<dl		< 1.00e3
Pseudomonas spp.	1.79e2		< 1.00e4
Pseudomonas aeruginosa	<dl		< 5.00e2
Staphylococcus spp.	<dl		< 1.00e4
Staphylococcus aureus	3.21e3	High ↑	< 5.00e2
Streptococcus spp.	8.57e3	High ↑	< 1.00e3
COMMENSAL OVERGROWTH MICROBES			
Desulfovibrio spp.	1.73e8		< 7.98e8
Methanobacteriaceae (family)	1.10e8		< 3.38e8
INFLAMMATORY & AUTOIMMUNE-RELATED BACTERIA			
Citrobacter spp.	<dl		< 5.00e6
Citrobacter freundii	<dl		< 5.00e5
Klebsiella spp.	<dl		< 5.00e3
Klebsiella pneumoniae	2.43e2		< 5.00e4
M. avium subsp. paratuberculosis	<dl		< 5.00e3
Proteus spp.	<dl		< 5.00e4
Proteus mirabilis	<dl		< 1.00e3
COMMENSAL INFLAMMATORY & AUTOIMMUNE-RELATED BACTERIA			
Enterobacter spp.	1.33e7		< 5.00e7
Escherichia spp.	5.57e8		< 3.80e9
Fusobacterium spp.	1.13e8	High ↑	< 1.00e8
Prevotella spp.	2.49e7		< 1.00e8

FUNGI/YEAST

FUNGI/YEAST	Result	Reference
Candida spp.	<dl	< 5.00e3
Candida albicans	<dl	< 5.00e2
Geotrichum spp.	<dl	< 3.00e2
Microsporidium spp.	<dl	< 5.00e3
Rhodotorula spp.	<dl	< 1.00e3

VIRUSES

VIRUSES	Result	Reference
Cytomegalovirus	<dl	< 1.00e5
Epstein-Barr Virus	<dl	< 1.00e7

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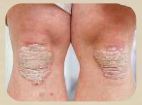
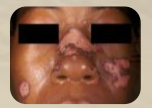
GI Map





PARASITES

PROTOZOA	Result	Reference
Blastocystis hominis	<dl	< 2.00e3
Chilomastix mesnili	<dl	< 1.00e5
Cyclospora spp.	<dl	< 5.00e4
Dientamoeba fragilis	<dl	< 1.00e5
Endolimax nana	<dl	< 1.00e4
Entamoeba coli	<dl	< 5.00e6
Pentatrichomonas hominis	<dl	< 1.00e2
WORMS		
Ancylostoma duodenale	Not Detected	Not Detected
Ascaris lumbricoides	Not Detected	Not Detected
Necator americanus	Not Detected	Not Detected
Trichuris trichiura	Not Detected	Not Detected
Taenia spp.	Not Detected	Not Detected

INTESTINAL HEALTH MARKERS

DIGESTION	Result	Reference
Steatocrit	<dl	< 15 %
Elastase-1	485	> 200 ug/g
GI MARKERS		
β-Glucuronidase	1029	< 2486 U/mL
Occult Blood - FIT	47 H	< 10 ug/g
IMMUNE RESPONSE		
Secretory IgA	>6000 H	510 - 2010 ug/g
Anti-gliadin IgA	295 H	< 175 U/L
Eosinophil Activation Protein (EDN, EPX)	0.19	< 2.34 ug/g
INFLAMMATION		
Calprotectin	1748 H	< 173 ug/g
ADD-ON TESTS		
Gluten Peptide	<dl	< 5.0 ng/g
Zonulin	351.6 H	< 175 ng/g

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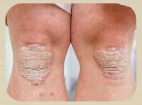

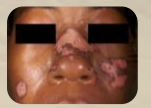

UNIVERSAL ANTIBIOTIC RESISTANCE GENES

	Result	Reference		Result	Reference		Result	Reference
b-Lactams	**Positive**	**Negative**	**Macrolides**	**Positive**	**Negative**	**Trimethoprim**	**Positive**	**Negative**
blaNDM-1	Absent		acrA	Absent		dfrA1	Absent	
CTX-M 1	Absent		acrB	Present		dfrA12	Absent	
CTX-M 2	Absent		emrE	Present		dfrA14	Present	
CTX-M 8/25	Absent		ermA	Absent		dfrA15	Absent	
CTX-M 9	Absent		ermB	Present		dfrA17	Absent	
GES	Absent		ermC	Absent		dfrA5	Absent	
OXA-1	Absent		macA	Absent		dfrA7	Absent	
PER-1	Absent		macB	Absent		dfrB1	Absent	
PER-2	Absent		mefA	Present		dfrB2	Absent	
SHV	Absent		mphA	Absent		dfrB3	Absent	
TEM	Present		msrA	Absent				
VEB	Absent		tolc	Present				
Fluoroquinolones	**Positive**	**Negative**	**Ciprofloxacin**	**Negative**	**Negative**	**Sulfonamides**	**Positive**	**Negative**
qnrA	Absent		emea	Absent		sul1	Absent	
qnrB	Present		pmra	Absent		sul2	Present	
qnrS1	Present					sul3	Absent	
qnrS2	Present							
Vancomycin	**Negative**	**Negative**	**Nitroimidazoles**	**Positive**	**Negative**	**Methacillin**	**Negative**	**Negative**
vanA	Absent		nimA	Absent		mecA	Absent	
vanB	Absent		nimB	Absent		**Chloramphenicol**	**Positive**	**Negative**
vanC1	Absent		nimC	Absent		cata13	Present	
vanC2-1	Absent		nimD	Absent				
vanC2-2	Absent		nimE	Present				

2025

CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

THE LGS PROTOCOL
THE LEAKY GUT SYNDORME PROTOCOL

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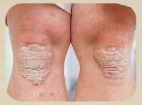

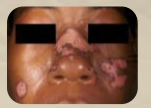
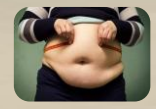


Teste Respiratorio SIBO

Perfil das Vias de Metilação do DNA

2025

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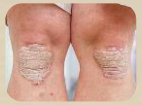

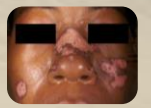

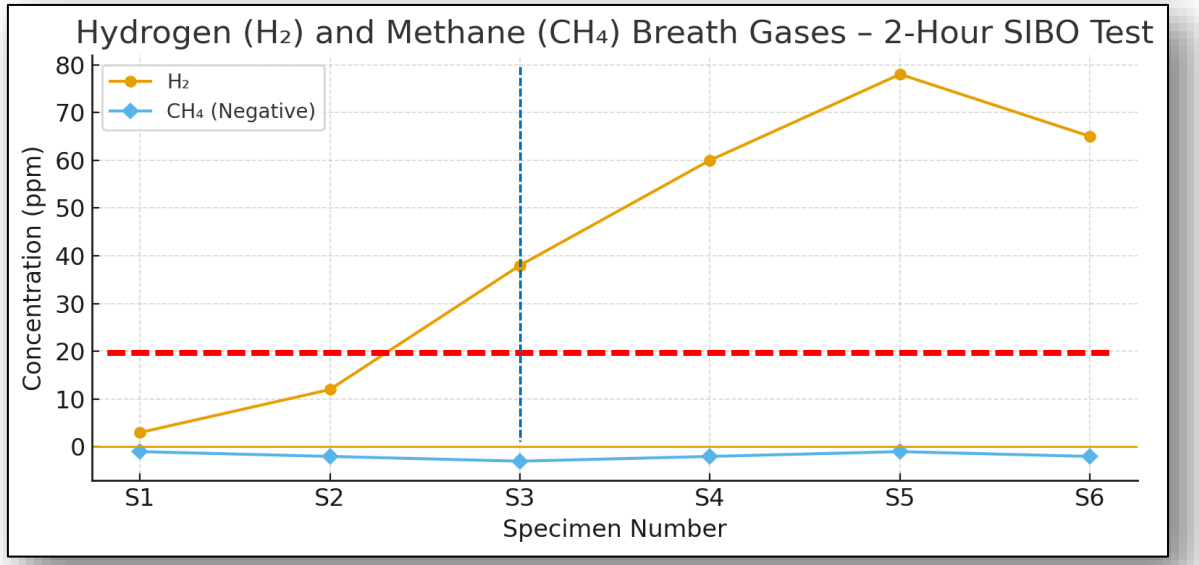

Gas (ppm)	Baseline 0 min (S1)	20 min (S2)	40 min (S3)	60 min (S4)	90 min (S5)	120 min (S6)
H_2	2	9	38	60	78	64
CH_4	-2	-5	-11	-9	-4	-6

2025

THE LGS PROTOCOL
THE LEAKY GUT SYNDORME PROTOCOL

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Teste Respiratorio SIBO

Dr. Eduardo Beltran

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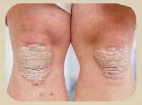

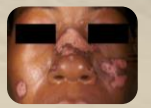

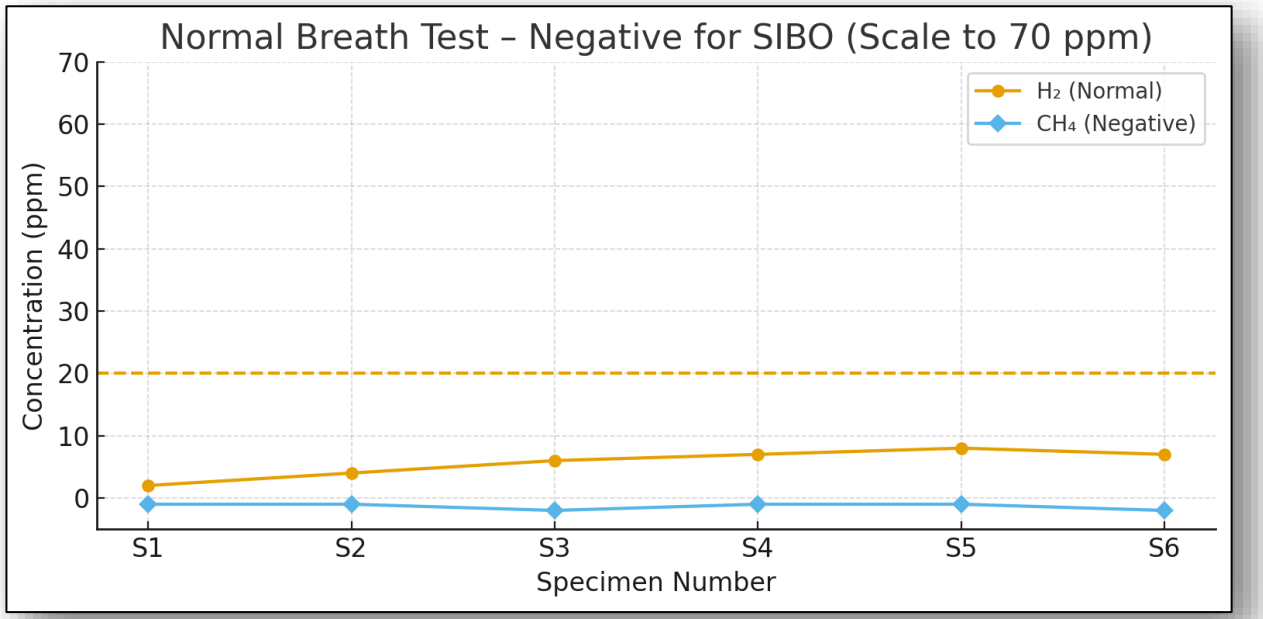

Gas (ppm)	Baseline 0 min (S1)	20 min (S2)	40 min (S3)	60 min (S4)	90 min (S5)	120 min (S6)
H_2	3	6	8	9	10	9
CH_4	0	0	-3	1	1	-2

2025

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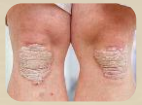
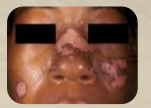
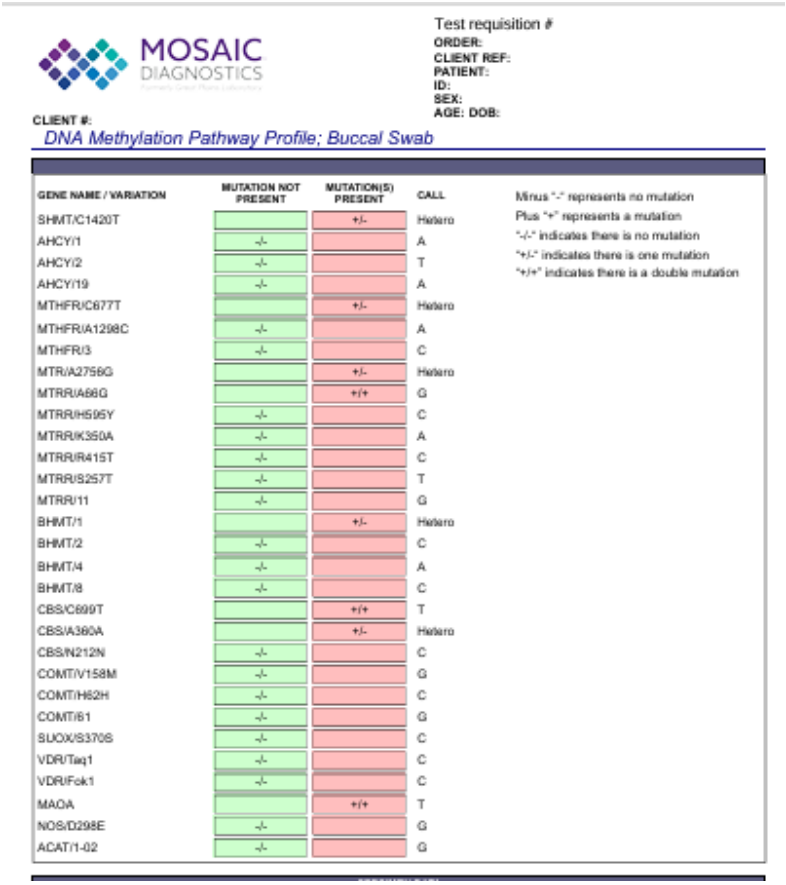




O Perfil de Metilação do DNA identifica 30 SNPs que podem influenciar a saúde e o risco de doenças:

ACAT – 1-02
AHCY – 19
AHCY – 1
AHCY – 2
BHMT – 1
BHMT – 2
BHMT – 4
BHMT – 8
CBS – A360A
CBS – C699T
CBS – N212N
COMT – 61
COMT – H62H
COMT – V158M
MAO A – R297R
MTHFR – 3
MTHFR – A1298C
MTHFR – C677T
MTR – A2756G
MTRR – 11
MTRR – A66G
MTRR – H595Y
MTRR – K350A
MTRR – R415T
MTRR – S257T
NOS – D298E
SHMT – C1420T
SUOX – S370S
VDR – Fok1
VDR – Taq1



MOSAIC DIAGNOSTICS

Test requisition #
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DNA Methylation Pathway Profile; Buccal Swab

GENE NAME / VARIATION	MUTATION NOT PRESENT	MUTATION(S) PRESENT	CALL
SHMT/C1420T		+/-	Hetero
AHCY/1	-/-		A
AHCY/2	-/-		T
AHCY/19	-/-		A
MTHFR/C677T		+/-	Hetero
MTHFR/A1298C	-/-		A
MTHFR/3	-/-		C
MTR/A2756G		+/-	Hetero
MTRR/A66G		+/+	G
MTRR/H595Y	-/-		C
MTRR/K350A	-/-		A
MTRR/R415T	-/-		C
MTRR/S257T	-/-		T
MTRR/11	-/-		G
BHMT/1		+/-	Hetero
BHMT/2	-/-		C
BHMT/4	-/-		A
BHMT/8	-/-		C
CBS/C699T		+/+	T
CBS/A360A		+/-	Hetero
CBS/N212N	-/-		C
COMT/V158M	-/-		G
COMT/H62H	-/-		C
COMT/61	-/-		G
SUOX/S370S	-/-		C
VDR/Taq1	-/-		C
VDR/Fok1	-/-		C
MAOA		+/+	T
NOS/D298E	-/-		G
ACAT/1-02	-/-		G

Minus "-" represents no mutation
Plus "+" represents a mutation
"-/-" indicates there is no mutation
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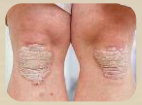
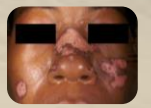
THE LGS PROTOCOL
THE LEAKY GUT SYNDROME PROTOCOL

Exames usados no Protooclo LGS:





Gene & Variation	rsID	Alleles	Result
CYP1A1 C2453A	rs1799814	GG	-/-
CYP1A2 164A>C	rs762551	AC	+/-
CYP1B1 L432V	rs1056836	CG	+/-
CYP2A6*2 1799T>A	rs1801272	AA	-/-
CYP2C9*2 C430T	rs1799853	CC	-/-
CYP2C9*3 A1075C	rs1057910	AA	-/-
CYP2C19*17	rs12248560	CC	-/-
CYP2D6 S486T	rs1135840	CC	+/+
CYP2D6 2850C>T	rs16947	--	no call
CYP2E1*1B 9896C>G	rs2070676	CG	+/-
CYP2E1*4 4768G>A	rs6413419	GG	-/-
CYP3A4*1B	rs2740574	TT	-/-
CYP3A4*2 S222P	rs55785340	AA	-/-
CYP3A4*3 M445T	rs4986910	AA	-/-
CYP3A4*16 T185S	rs12721627	GG	-/-
GSTP1 I105V	rs1695	AG	+/-
GSTP1 A114V	rs1138272	CC	-/-
SOD2 A16V	rs4880	GG	+/+
NAT1 R64W	rs1805158	CC	-/-
NAT2 I114T	rs1801280	CT	+/-
NAT2 R197Q	rs1799930	AG	+/-
NAT2 G286E	rs1799931	GG	-/-
NAT2 R64Q	rs1801279	GG	-/-
NAT2 K268R	rs1208	AG	+/-

Gene & Variation	rsID	Alleles	Result
COMT V158M	rs4680	AG	+/-
COMT H62H	rs4633	CT	+/-
COMT P199P	rs769224	AG	+/-
VDR Bsm	rs1544410	CC	-/-
VDR Taq	rs731236	AA	+/+
MTHFR C677T	rs1801133	GG	-/-
MTHFR A1298C	rs1801131	TT	-/-
MTR A2756G	rs1805087	AA	-/-
MTRR A66G	rs1801394	AA	-/-
MTRR H595Y	rs10380	CC	-/-
MTRR K350A	rs162036	AA	-/-
MTRR R415T	rs2287780	CC	-/-
BHMT-02	rs567754	TT	+/+
CBS C699T	rs234706	GG	-/-
SHMT1 C1420T	rs1979277	AG	+/-

geneticgenie

Homozygous	+/+
Heterozygous	+/-
Normal	-/-

Detoxification Superoxide Dismutase (SOD2 A16V) – Homozygous Variant (+/+)

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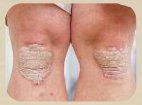
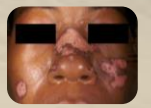




Receptor de Vitamina D (VDR) – Importante

- ❑ **VDR Taq: AA (+/+) → variante homozigota**
- ❑ **VDR Bsm: CC (–/–)** → normal

Interpretação:

O VDR Taq (+/+) está associado a:

- ❑ Sinalização reduzida do receptor de vitamina D
- ❑ Maior necessidade de vitamina D
- ❑ Menor modulação imune
- ❑ Metabolismo mais lento de dopamina (quando combinado com variantes COMT)

➞ **Clinicamente: Este paciente costuma responder melhor a doses mais altas de vitamina D.**

SOD2 A16V – Variante Homozigota (+/+)

Esse é um dos achados mais importantes do painel.

SOD2 +/+ causa:

•Redução da capacidade antioxidante mitocondrial

•Maior estresse oxidativo

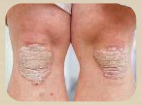
•Risco aumentado de inflamação crônica

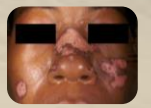
•Relação forte com autoimunidade cutânea (como vitiligo)

➞ **Clinicamente:** focar em proteção mitocondrial

— NAC, ALA, CoQ10, Glutationa, Vitamina C, Ômega-3, polifenóis.

Estudo Genetico:





Resumo Funcional no Estilo

✓ **Metilação intacta (sem defeitos de MTHFR)**

✓ **Alto risco de estresse oxidativo (SOD2 +/+) → muito relevante para vitiligo**

✓ **Metabolismo lento de catecolaminas (COMT variantes)**

→ Sensível a metil-B12/metilfolato

✓ **VDR Taq +/+**

→ Necessidade aumentada de vitamina D

✓ **Detox fase I e II com variantes relevantes (CYP2D6, NAT2)**

→ Mais lento para metabolizar drogas e toxinas

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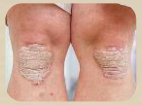

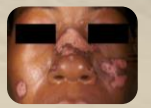

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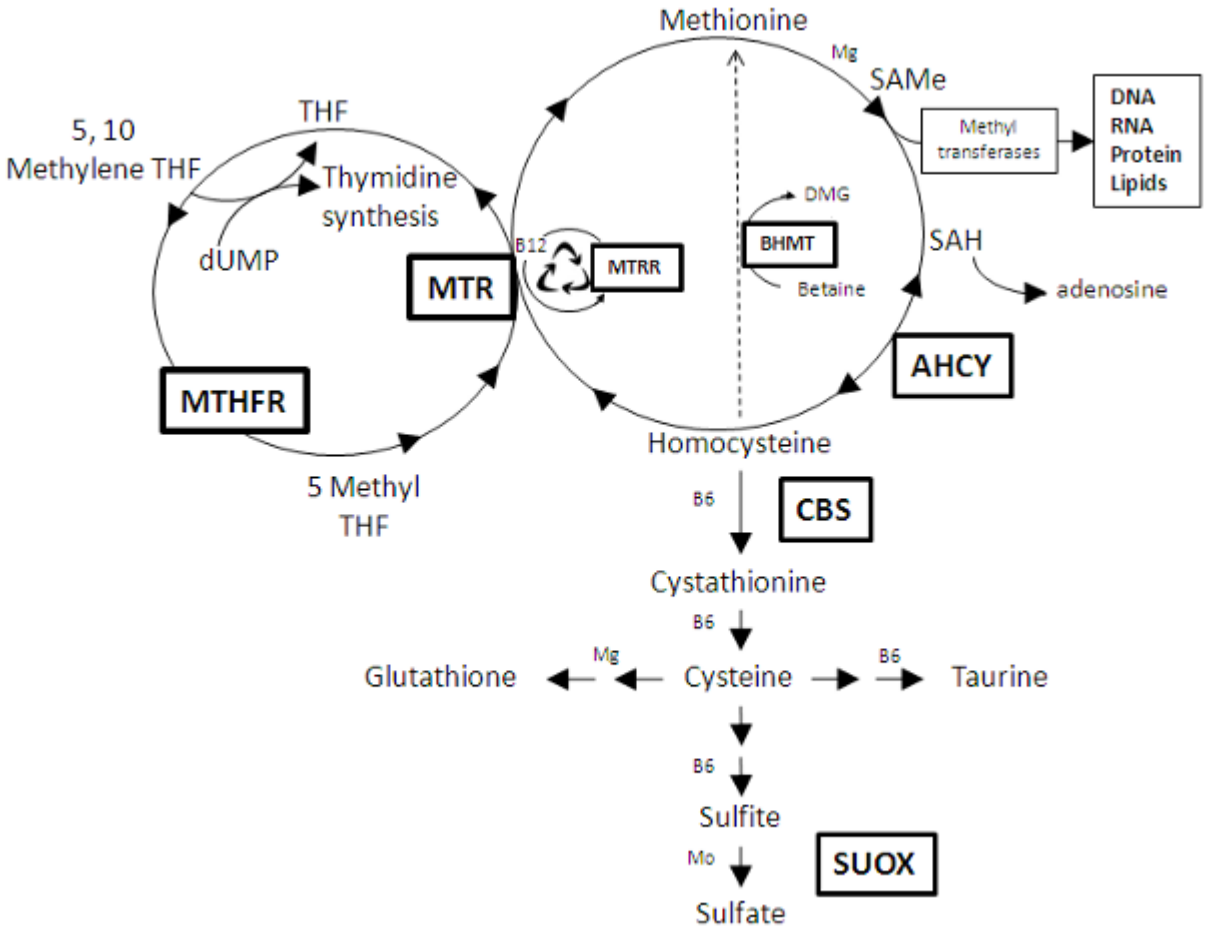

2025

CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

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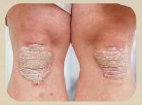
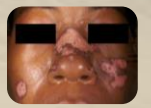
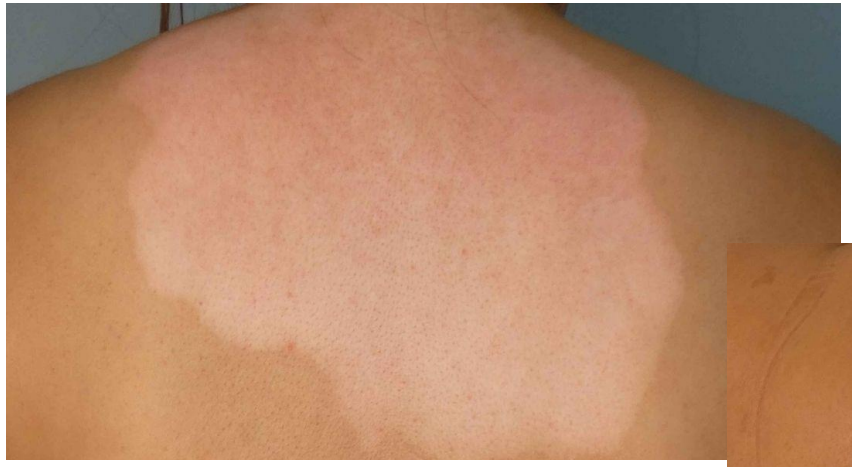
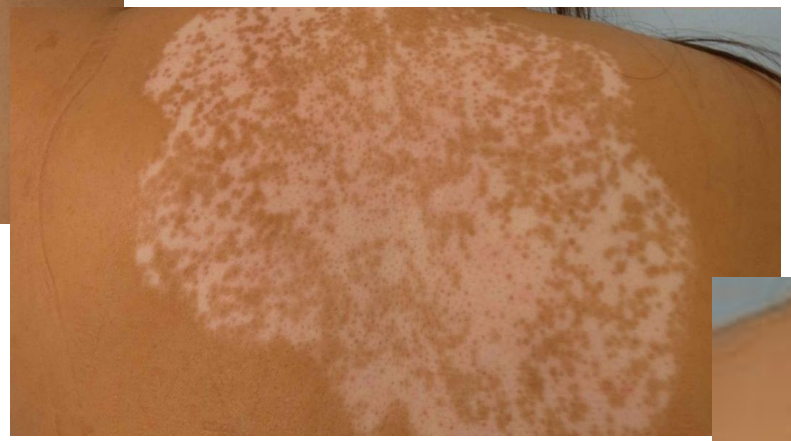
GI MAP



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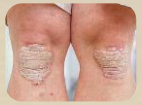

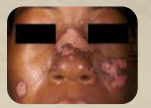
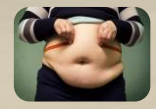


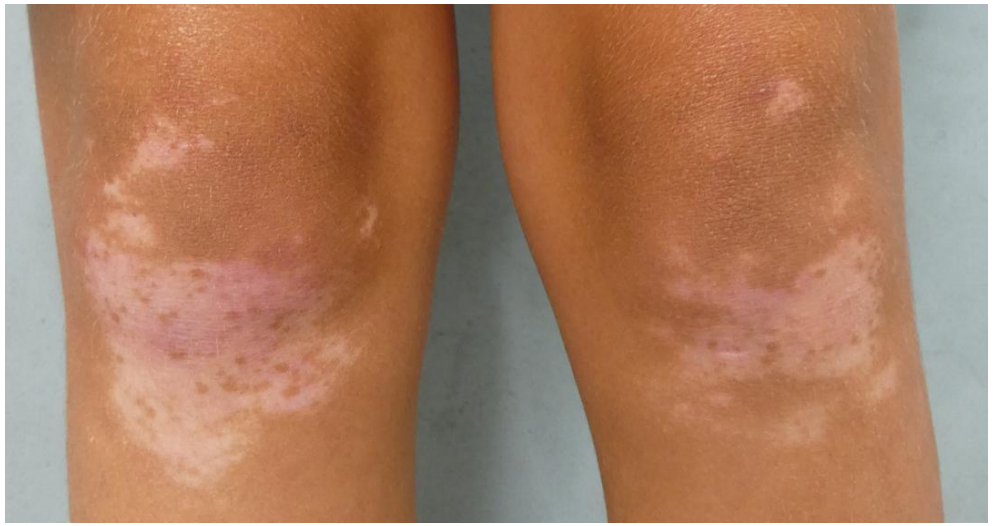

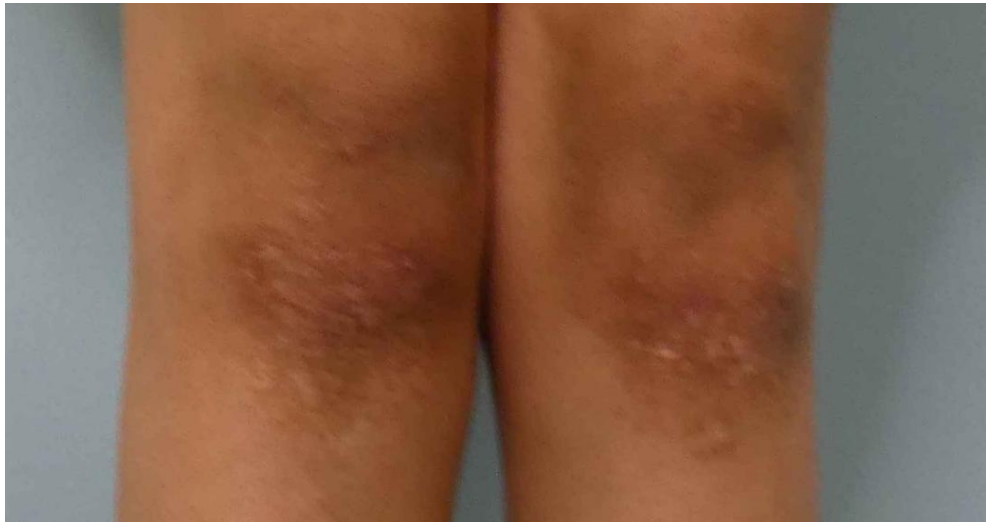

Os 3 Pilares do LGS Protocol

Modulação do Microbioma

Restaurar a Diversidade Microbioma

- ❑ Estratégias dietéticas
- ❑ Prebióticos e fibras específicas
- ❑ Probióticos direcionados
- ❑ Pós-bióticos e SCFAs (butirato, propionato, acetato)
- ❑ Redução de inflamação e reparo da barreira mucosa.

Modulação do Sistema Imune

Altas Doses de Vitamina D

- ❑ Aplicação clínica da terapia de imunomodulação com vitamina D.
- ❑ Uso criterioso de cofatores essenciais: K2, magnésio, ômega-3, vitaminas B, zinco, selênio, entre outros.
- ❑ Redução de inflamação crônica e autorregulação imunológica.

Compensação Epigenética

Compensação Polimorfismos (SNPs)

- ❑ Identificação dos polimorfismos envolvidos.
- ❑ Correção desses polimorfismos, como no ciclo de metilação, vias de detoxificação, estresse oxidativo, entre outros.
- ❑ Uso de suplementos (vitaminas, minerais, aminoácidos, enzimas, hormônios etc.) que auxiliam na ativação de vias epigenéticas de reparação tecidual.

THE LGS PROTOCOL
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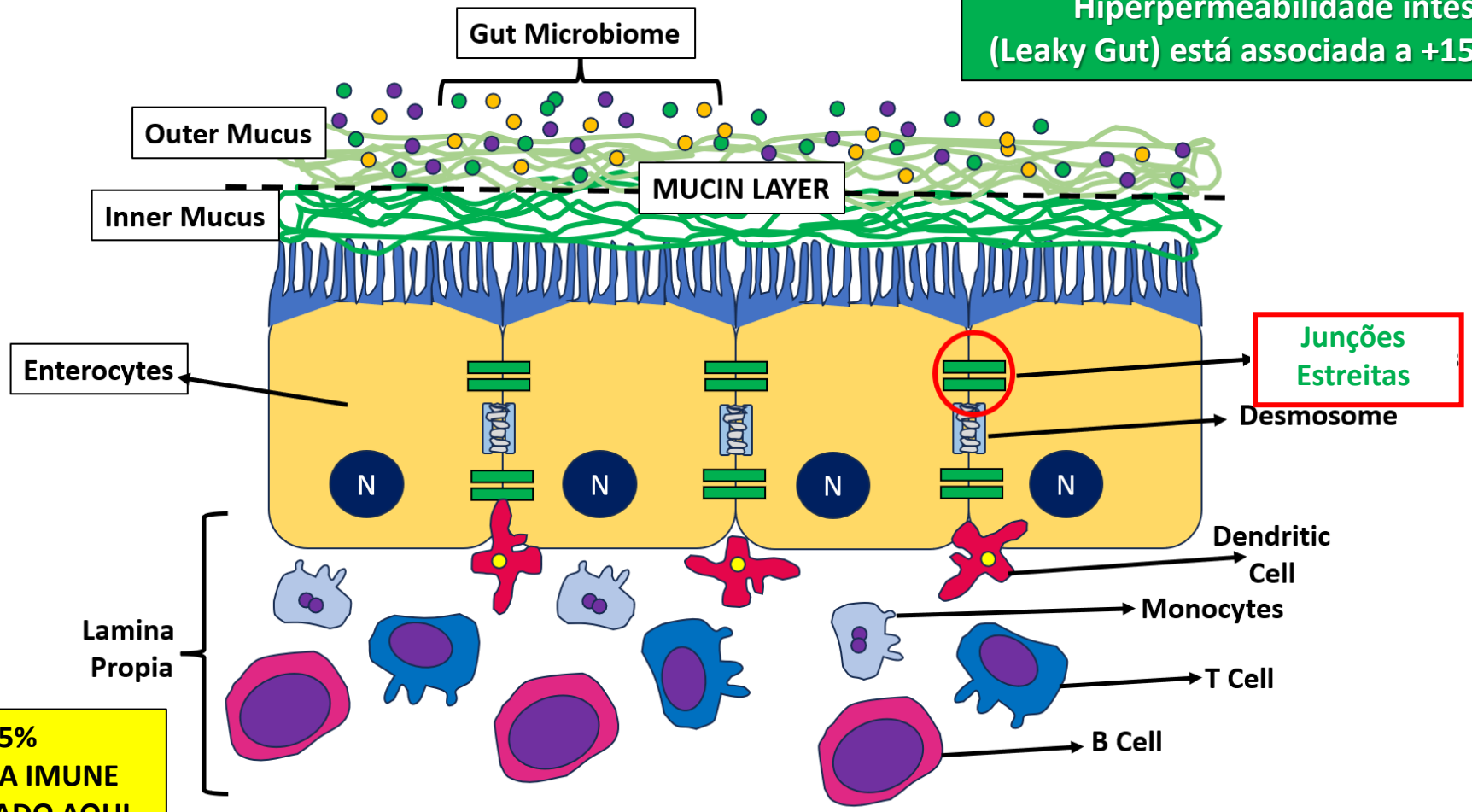
A Barreira Intestinal: O Verdadeiro Órgão da Imunidade

Hiperpermeabilidade intestinal (Leaky Gut) está associada a +150 doenças



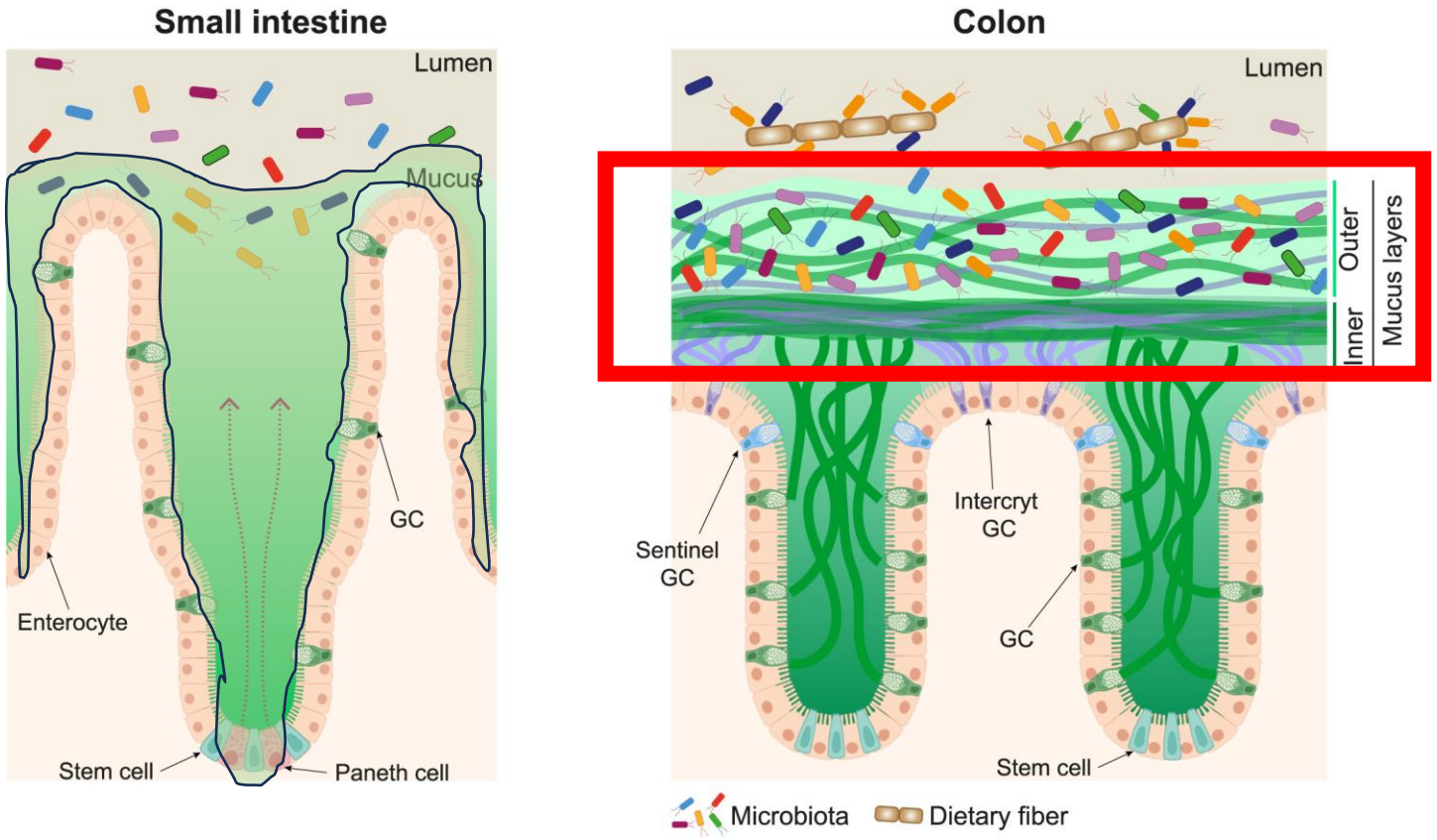
80–85% DO SISTEMA IMUNE É ENCONTRADO AQUI

2025

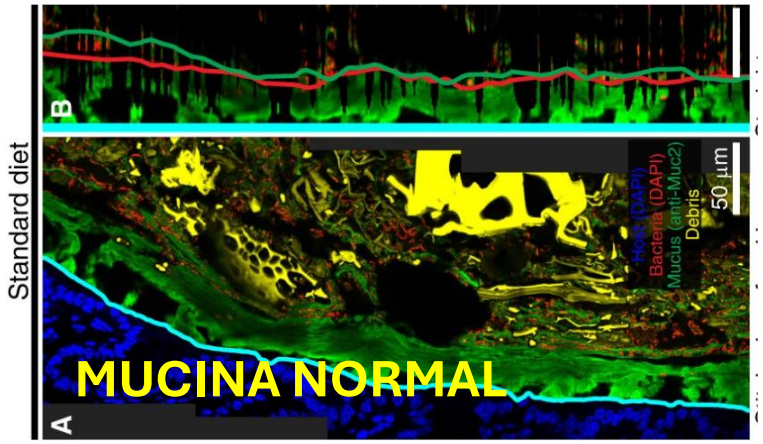
CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

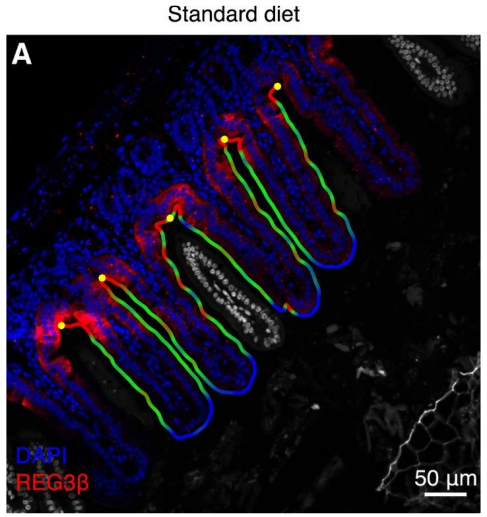
THE LGS PROTOCOL
THE LEAKY GUT SYNDROME PROTOCOL

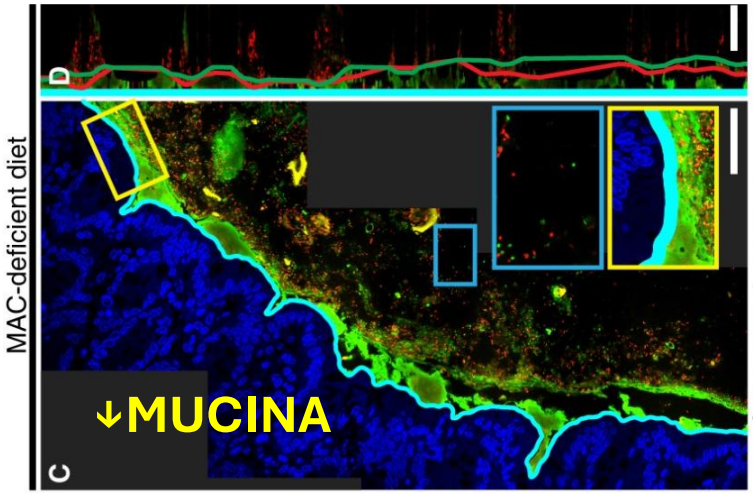
A Barreira Intestinal: O Verdadeiro Órgão da Imunidade

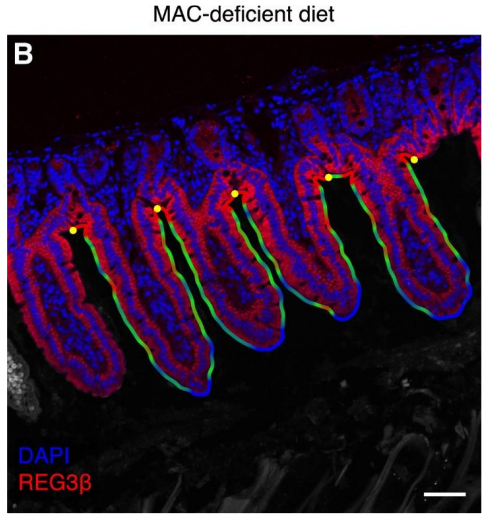


CAMADA DE MUCINA

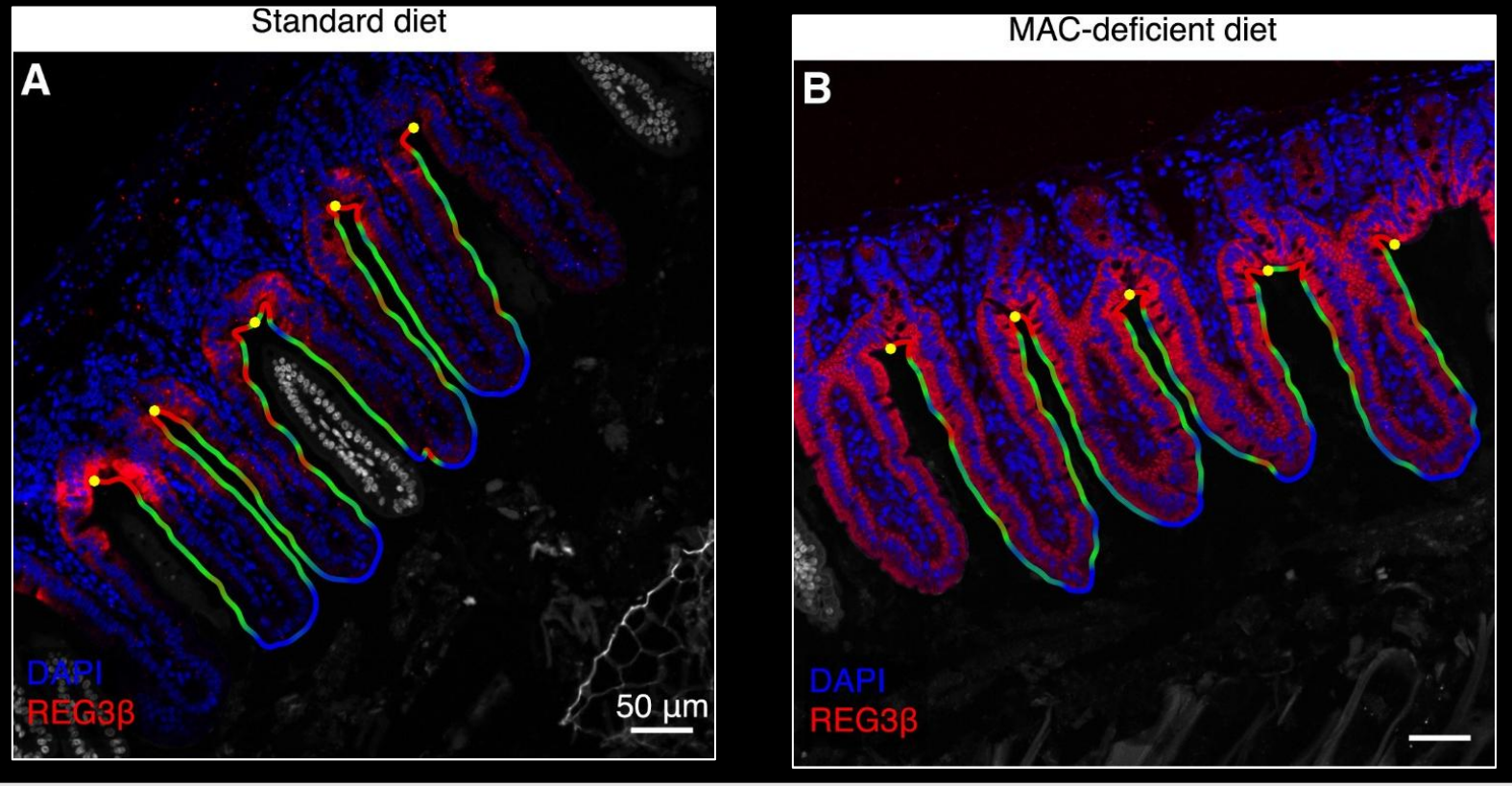








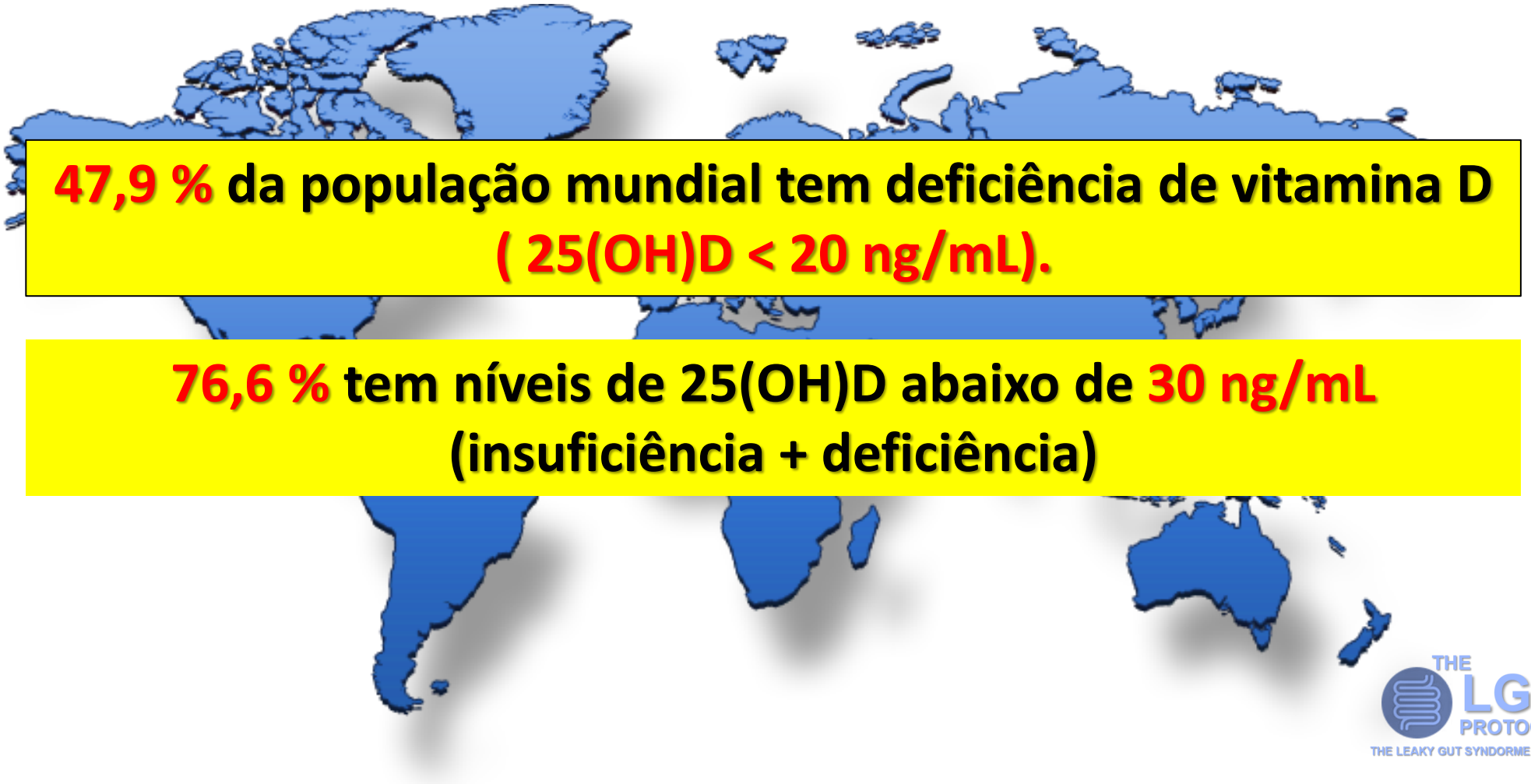
CAMADA DE MUCINA



As imagens mostram cortes de tecido intestinal vistos em microscopia de fluorescência, onde os núcleos aparecem em azul e a proteína REG3β em vermelho. Na primeira imagem observa-se uma camada de mucina preservada, funcionando como barreira protetora e mantendo as células de defesa concentradas na base das criptas, sem contato direto com a microbiota. Já na segunda imagem há deficiência de mucina, o que permite maior aproximação das bactérias às células epiteliais e leva a uma interação mais intensa entre o sistema imune e a microbiota, cenário que pode favorecer processos inflamatórios.

doi: 10.1016/j.chom.2015.09.002.

VITAMINA D NO MUNDO



47,9 % da população mundial tem deficiência de vitamina D
(25(OH)D < 20 ng/mL).

76,6 % tem níveis de 25(OH)D abaixo de **30 ng/mL**
(insuficiência + deficiência)

THE LGS PROTOCOL
THE LEAKY GUT SYNDORME PROTOCOL

Vitamina D → Hormônio

+80 Funções Metabólicas

Regula + 3500 genes (fetal)

+3000 genes no adulto

FISIOLOGIA - VITAMINA D

Síntese ou Ingestão

7DHC

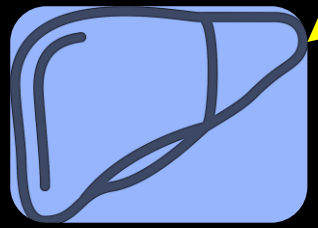
UVB

A vitamina D_3 é **biologicamente inativa** até ser hidroxilada.

COLECALICEROL

(CYP2R1)

25 HYDROXILASE

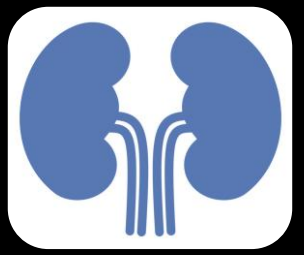


25OHD3

CALCIFEDIOL

(CYP27B1)

1,25 ALFA HYDROXILASE



VDBP

VDBP Gene

VDR Gene

VDR

1,25DIHIDROXIVITAMINA D3

(CALCITRIOL)

Cascata de Conversão

THE LGS PROTOCOL

THE LEAKY GUT SYNDORME PROTOCOL

2025

CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

Dr. Eduardo Beltran

POLIMORFISMOS (SNP's)

Síntese ou Ingestão

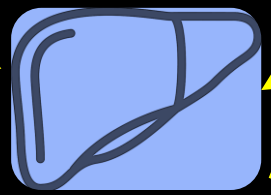
UVB

7DHC

COLECALICEROL
10.000 IU

(CYP2R1)

25 HYDROXILASE



25OHD3
CALCIFEDIOL
5.000 IUII

(CYP27B1)

1,25 ALFA HYDROXILASE

RESISTÊNCIA A VITAMINA D

VDBP

1,25DIHIDROXIVITAMINA D3
(CALCITRIOL)
3.000 IU

VDR Gene

VDR

THE LGS PROTOCOL
THE LEAKY GUT SYNDORME PROTOCOL

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CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

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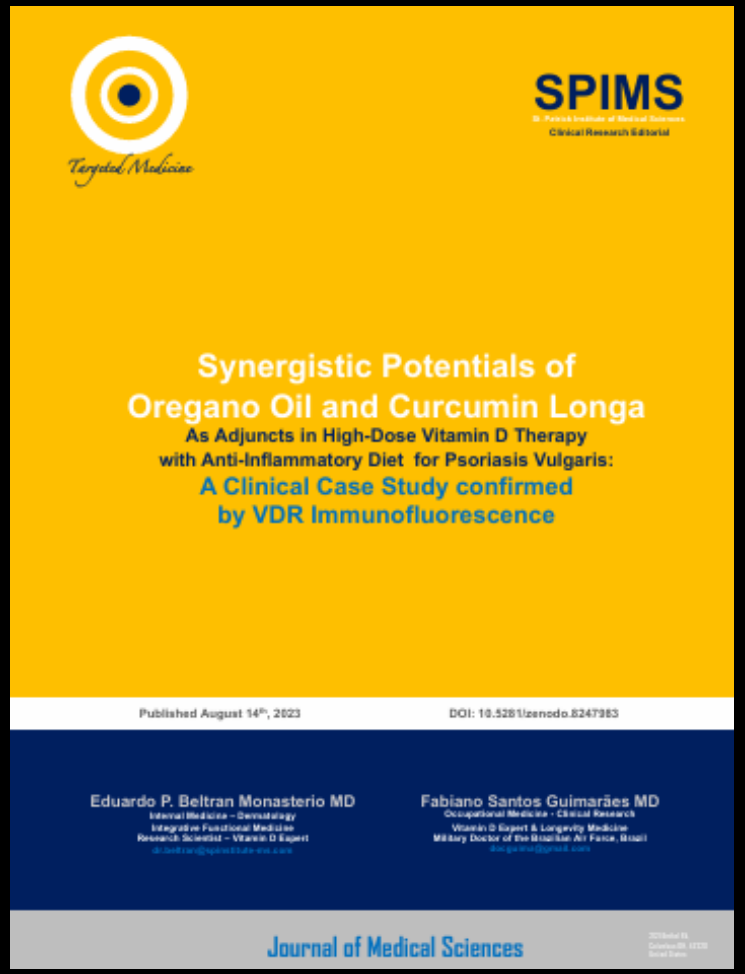
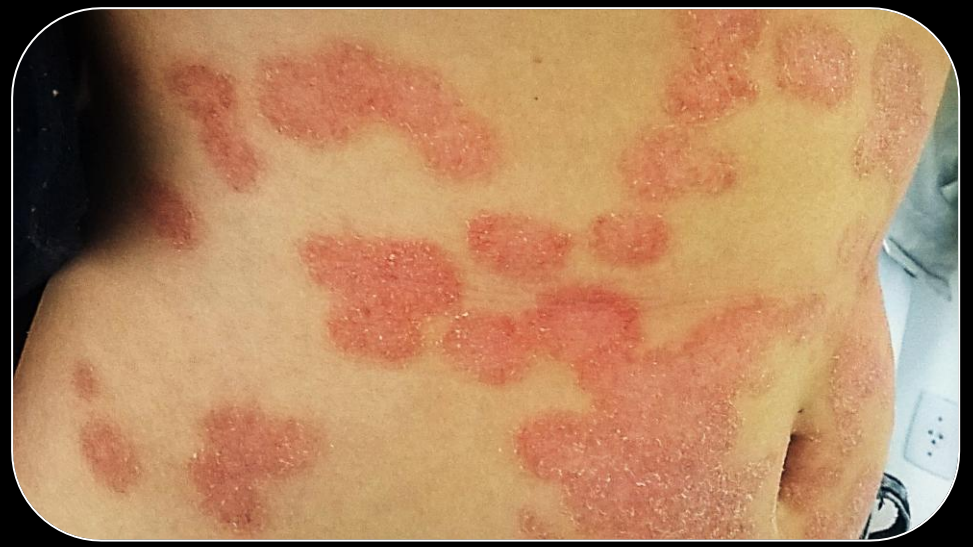
Caso Clinico



PSORIASE VULGAR



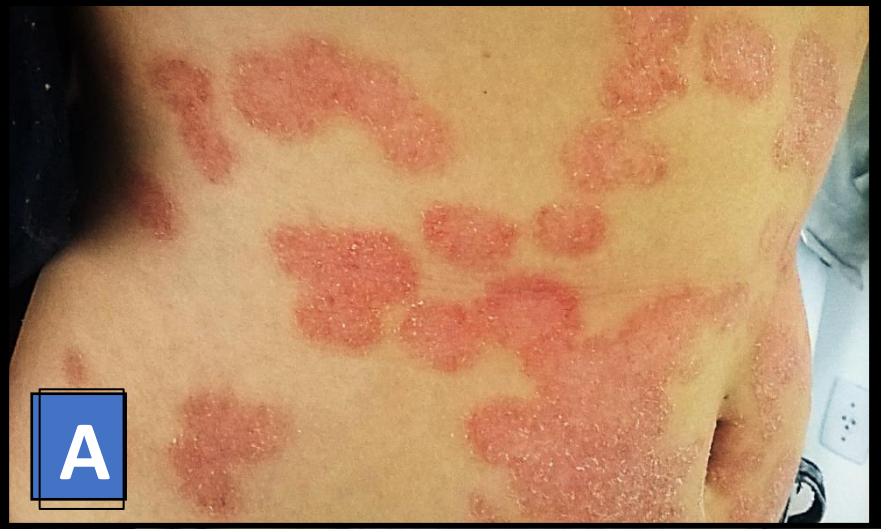
Dr. Eduardo Beltran

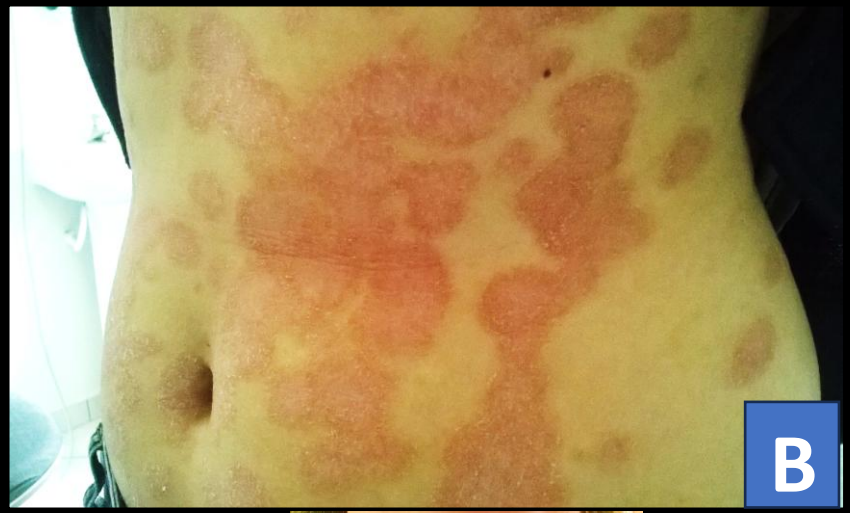
Dr. Fabiano Guimarães

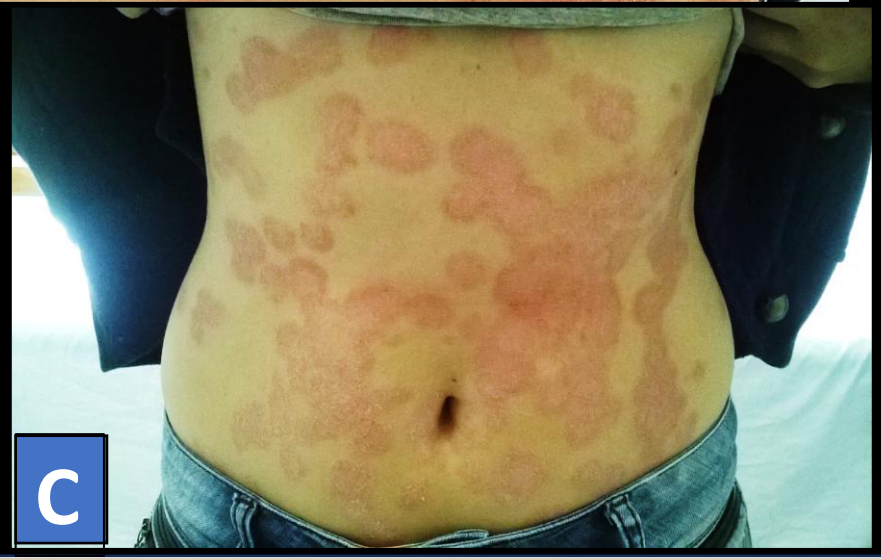
2025

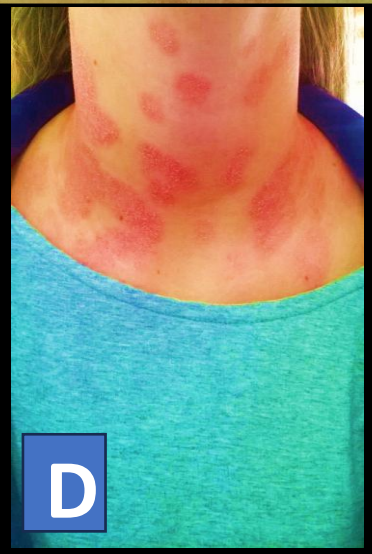
CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

Caso Clinico









Caso Clinico

Lab Results	03/18/2019	07/16/2019	10/23/2019	Normal Reference Values
25OHD3 - Calcifediol	46 ng/ml	123 ng/ml	148 ng/ml	20-100 ng/ml
1,25OHD3 - Calcitriol	72 pg/ml	78 ng/ml	76 ng/ml	19.9-79 pg/ml
PTH	81 pg/ml	41 pg/ml	24 pg/ml	13.6 – 85.8 pg.ml
Serum Ca+	1.24 mmol/L	1.20 mmol/L	1.23 mmol/L	1,00 a 1,35 mmol/L
Ionized Ca+	8.9 mg/dL	9.3 mg/dL	9.6 mg/dL	8,4 a 10,2 mg/dL
Urea	23 mg/dL	28 mg/dL	26 mg/dL	15,0 a 36,0 mg/dL
Creatinine	1.0 mg/dL	0.9 mg/dL	1.0 mg/dL	0,7 a 1,2 mg/dL
ALT (Alanine Aminotransferase)	44 U/L	24 U/L	17 U/L	<35 U/L (women)
AST (Aspartate Aminotransferase)	41 U/L	26 U/L	15U/L	14,0 a 36,0 U/L
Insulin	28.2 µU/mL	10.4 µU/mL	7.7 µU/mL	2,0 a 25,0 µU/mL

Caso Clinico

GI MAP Comensal Bacteria/Keystone Bacteria	*Result*	*Normal Reference Range*
Bacteroides fragilis:	3.42e11 **High**	1.6e9 to 2.5e11
Bifidumbacterium:	5.28e7 **Low**	> 6.0e7
Escherichia spp:	1.54e10 **High**	3.7e6 to 3.8e8
Lactobacillus:	9.08e2 **Low**	8.6e5 to 6.2e8
Akkermansia muciniphila:	**Undetectable**	1.01e3 to 8.2e6
Roseburia spp	1.56e8	5.0e7 to 2.0e10
Bacterial Phyla	***Result***	***Normal Reference Range***
Bacteroidetes:	7.18e12 **High**	8.6e11 to 3.3e12
Firmicutes:	2.09e10 **Low**	5.7e10 to 3.0e11
Firmicutes:Bacteroidetes Ratio	0.00	< 1.0
Opportunistic/Overgrowth Microbes - Dysbiotic & Overgrowth Bacteria	***Results***	***Normal Reference Range***
Staphylococcus spp:	1.11e4 **High**	< 1.00e4
Inflammatory & Autoimmune-Related Bacteria:	Result	Normal Reference Range
Klebsiella spp:	7.23e4 **High**	< 5.00e3
Commensal Inflammatory & Autoimmune-Related Bacteria:	***Result***	***Normal Reference Range***
Escherichia spp:	4.23e9 **High**	< 3.80e9
Fungi/Yeast:	***Result***	***Normal Reference Range***
Candida spp.:	1.98e6 **High**	< 5.00e3
Candida Albicans:	1.83e5 **High**	< 5.00e2

INTESTINAL HEALTH MARKERS

DIGESTION	Result	Reference
Steatocrit	< dL	< 15 %
Elastase-1	>750	> 200 ug/g
GI MARKERS		
β-Glucuronidase	639	< 2486 U/mL
Occult Blood - FIT	3	< 10 ug/g
IMMUNE RESPONSE		
Secretory IgA	<210 L	510 - 2010 ug/g
Anti-gliadin IgA	21	< 175 U/L
Eosinophil Activation Protein (EDN, EPX)	0.40	< 2.34 ug/g
INFLAMMATION		
Calprotectin	429 H	< 173 ug/g
ADD-ON TESTS		
Zonulin	358 H	< 175 ng/g

2025

CONGRESSO INTERNACIONAL NUTRIÇÃO INTEGRATIVA FUNCIONAL

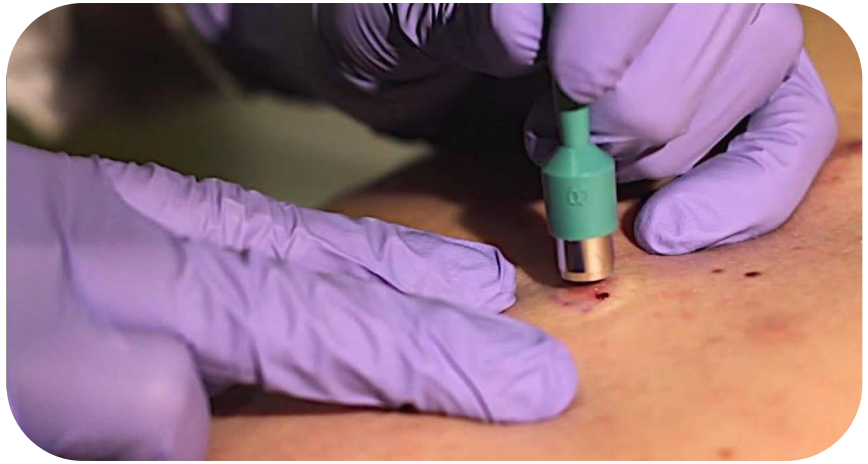
Dr. Eduardo Beltran

Caso Clinico – SNPs found in Patient

Genes:	CYP27B1	VDR	MTHFR	MTR
SNP	rs10877012 rs4646536	rs2228570 (FokI) rs731236 (TaqI) rs7975232 (ApaI)	rs1801133 (C677T) rs1801131 (A1298C)	rs1805087 (A2756G)
Function	Involved in Vitamin D activation from 25OHD3 (calcifediol) to 1,25OHD3 (calcitriol).	Vitamin D Receptor responsible for responding to vitamin D levels.	Methylenetetrahydro- folate Reductase enzyme responsible for converting 5,10- methylenetetrahydro-folate to 5- methyltetrahydrofolate	Methionine Synthase Reductase enzyme responsible for converting homocysteine to methionine
Health Implication	May influence vitamin D metabolism conversion and overall vitamin D status of active vitamin D3 (Calcitriol).	Impact on Calcium absorption, bone health, and immune system function.	Associated with altered folate metabolism, potentially affecting methylation processes.	Involved in homocysteine and methionine metabolism, impacting DNA methylation and protein synthesis.

BIOPSIA DE PELE

(Punch Biopsy)



Caso Clinico

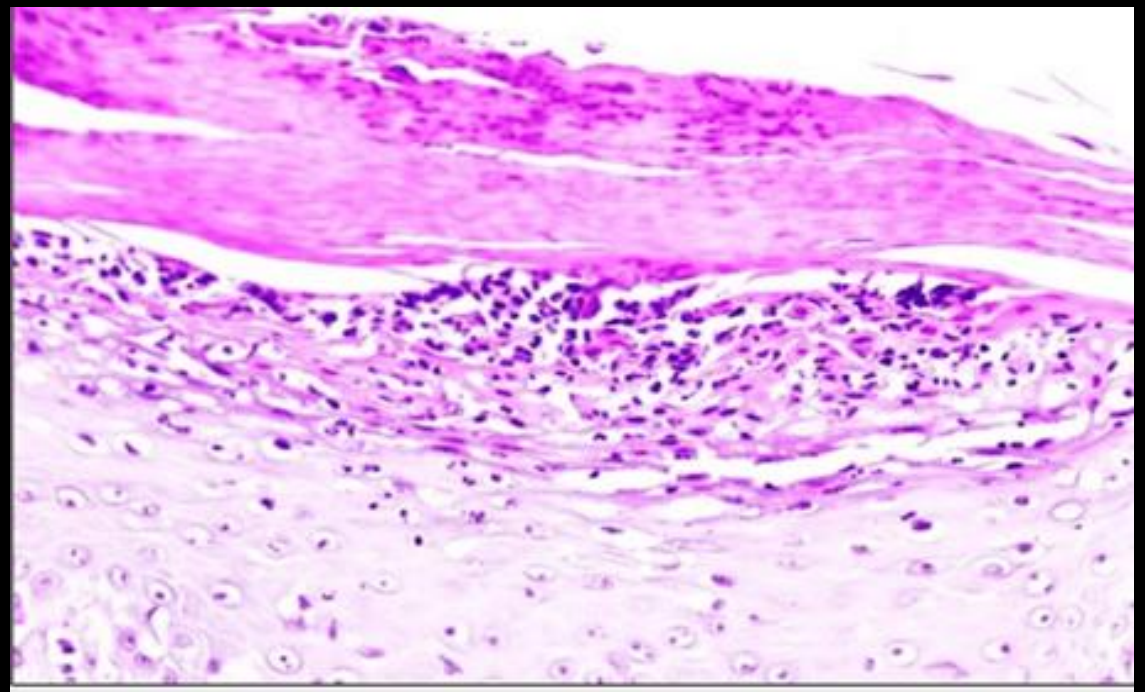
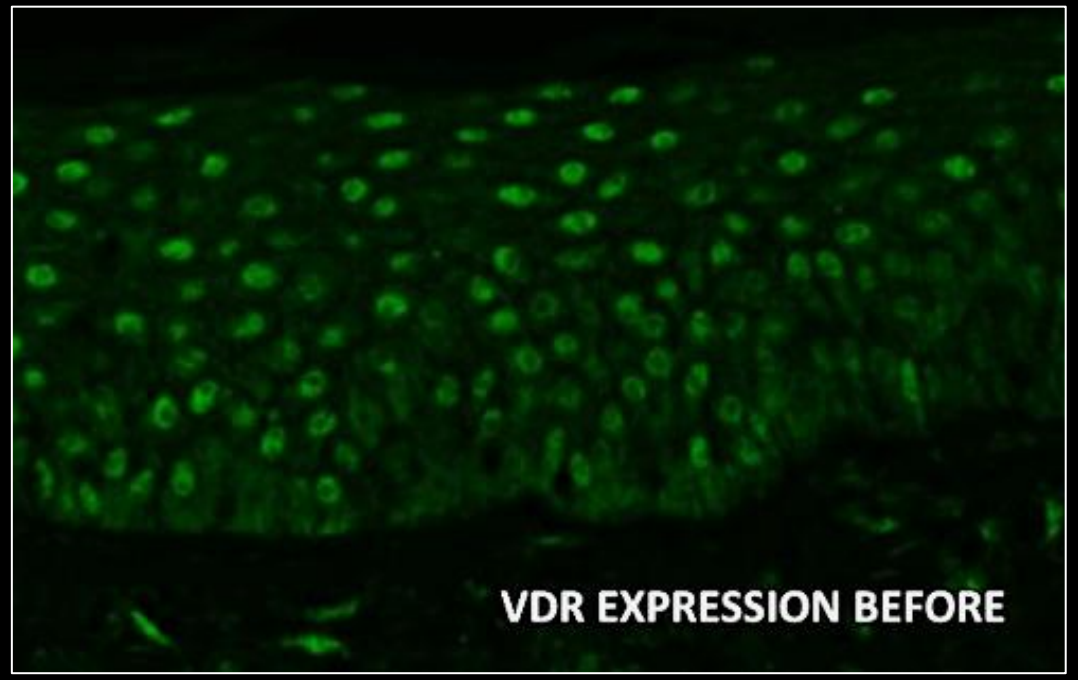


FIGURE 1: Skin biopsy Anatomic Location: Left forearm

The skin biopsy under microscopic examination displays distinctive features consistent with psoriasis. The epidermis exhibits significant hyperplasia, characterized by elongation and thickening of the rete ridges. Notable findings include focal parakeratosis, uniform acanthosis, and elongated epidermal projections known as "regular acanthosis." Additionally, Munro microabscesses, aggregations of neutrophils within the epidermis, are evident. In the underlying dermis, there is a mild perivascular lymphocytic infiltrate.



IMMUNOFLOURESENCIA DOS VDR

3 Meses Depois

Caso Clinico

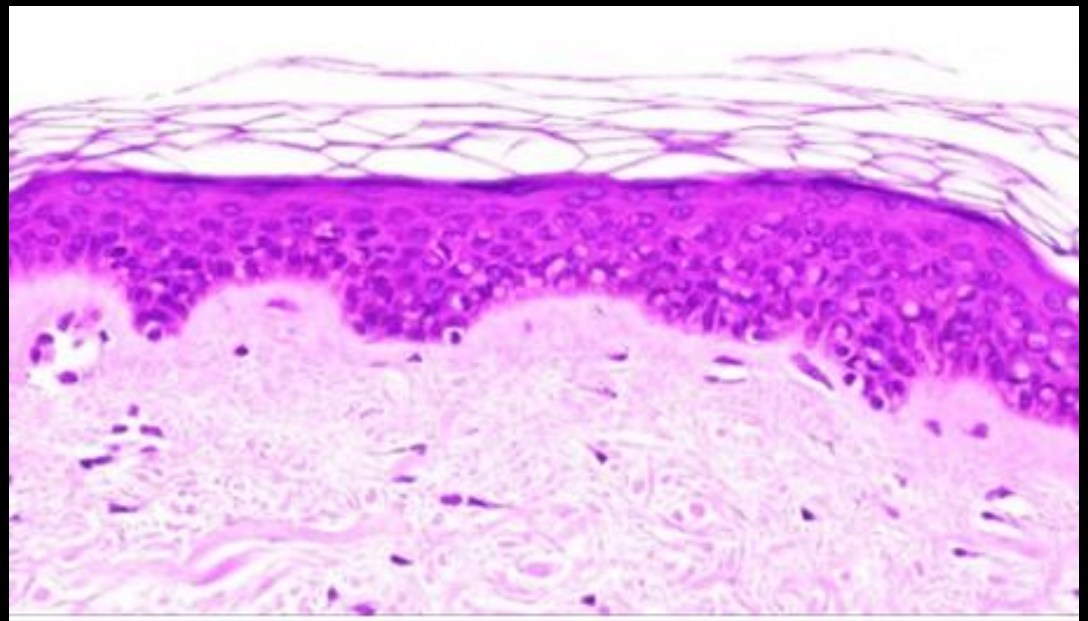
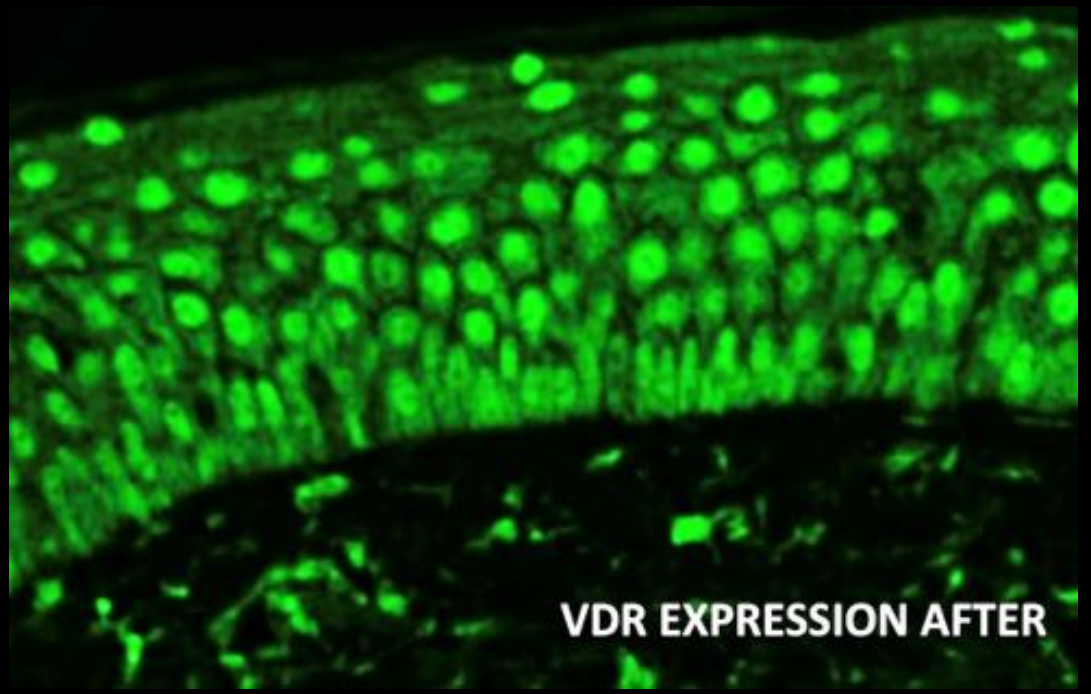


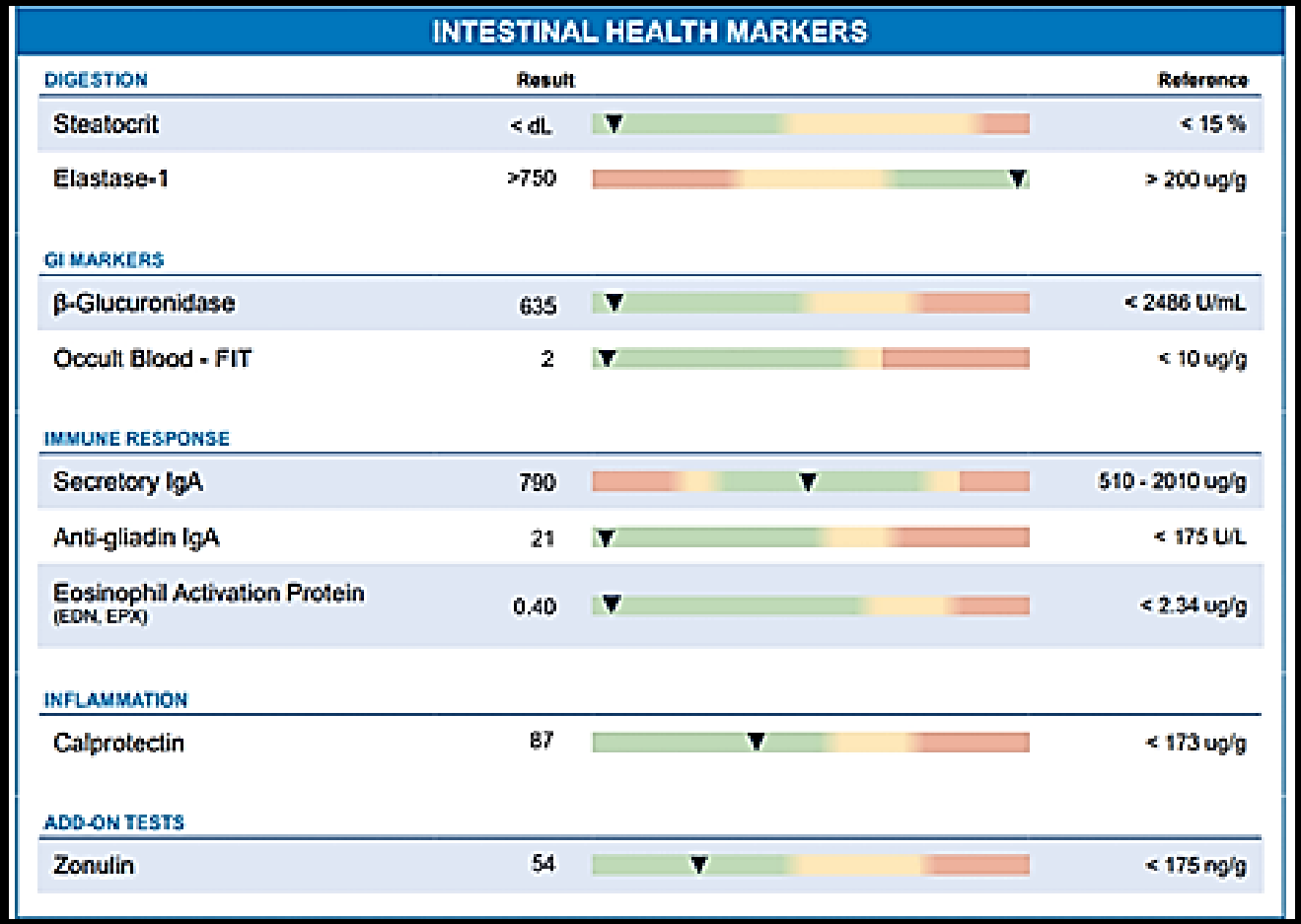
FIGURE 3: Second Skin Biopsy - Anatomic Location: Left forearm (Near original site)

Microscopic Description: Upon examining the skin biopsy, the findings indicate substantial improvement in the skin lesions, now displaying an almost normal appearance. The epidermis exhibits regular thickness and architecture, with no signs of hyperplasia or elongation of rete ridges. Parakeratosis and acanthosis are not present. The absence of regular acanthosis and previously noted Munro microabscesses suggests near-complete resolution. The underlying dermis appears unremarkable, showing no significant inflammation or infiltrates.



IMMUNOFLOURESENCIA DOS VDR

Caso Clinico



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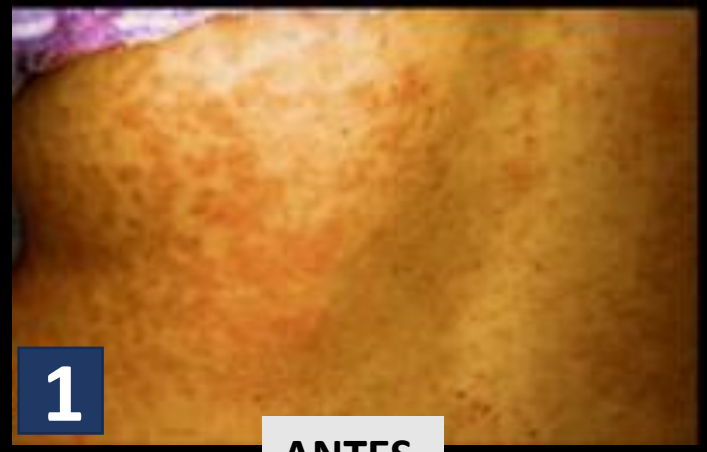
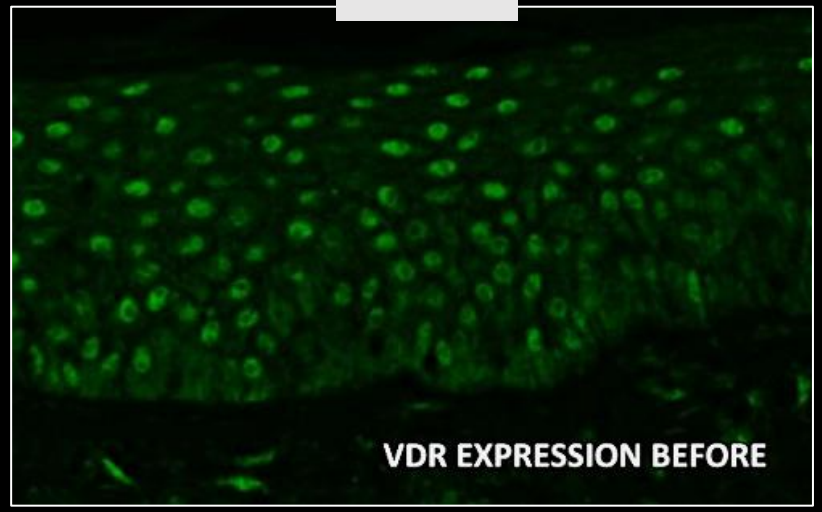
INFLAMMATION		
Calprotectin	87	< 173 ug/g
ADD-ON TESTS		
Zonulin	54	< 175 ng/g

Caso Clinico

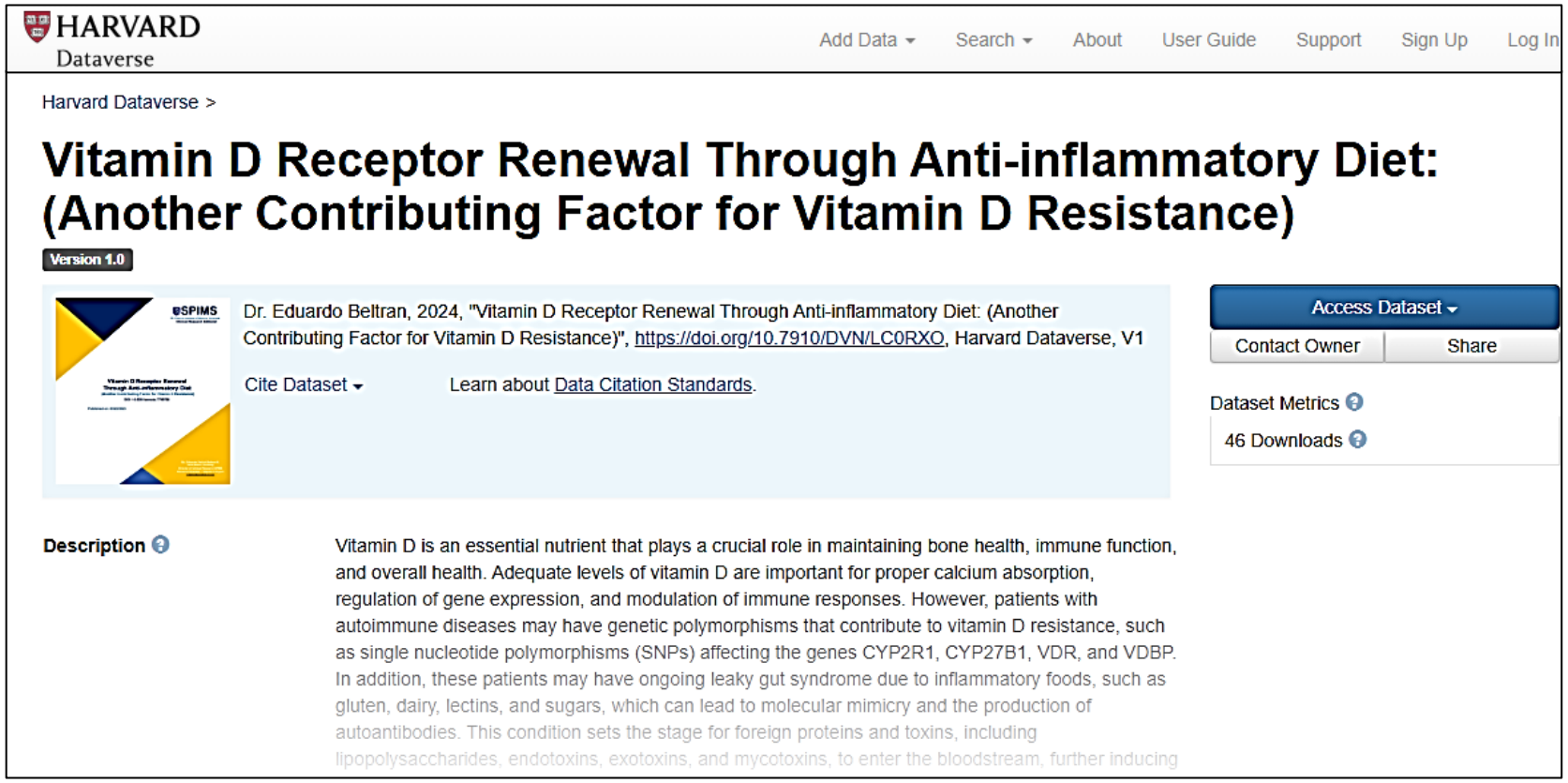


ANTES



DEPOIS

“Renovação do VDR via Dieta Anti-inflamatória”



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Vitamin D Receptor Renewal Through Anti-inflammatory Diet: (Another Contributing Factor for Vitamin D Resistance)

Version 1.0

Dr. Eduardo Beltran, 2024, "Vitamin D Receptor Renewal Through Anti-inflammatory Diet: (Another Contributing Factor for Vitamin D Resistance)", https://doi.org/10.7910/DVN/LC0RXO, Harvard Dataverse, V1

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Description

Vitamin D is an essential nutrient that plays a crucial role in maintaining bone health, immune function, and overall health. Adequate levels of vitamin D are important for proper calcium absorption, regulation of gene expression, and modulation of immune responses. However, patients with autoimmune diseases may have genetic polymorphisms that contribute to vitamin D resistance, such as single nucleotide polymorphisms (SNPs) affecting the genes CYP2R1, CYP27B1, VDR, and VDBP. In addition, these patients may have ongoing leaky gut syndrome due to inflammatory foods, such as gluten, dairy, lectins, and sugars, which can lead to molecular mimicry and the production of autoantibodies. This condition sets the stage for foreign proteins and toxins, including lipopolysaccharides, endotoxins, exotoxins, and mycotoxins, to enter the bloodstream, further inducing

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Open Access Case Report

The LGS Protocol, validated through VDR Immunofluorescence and Microbiome Test Correlation, supports Vitamin D Receptor Renewal via an Anti-inflammatory Diet in a clinical case of Psoriasis Vulgaris.

Eduardo P. Beltran Monasterio [1, 2], Fabiano Santos Guimaraes [3]

1. Dermatology - Integrative Functional Medicine, Universidade Gama Filho (Institute of Research and Medical Education), Florianopolis, BRA 2. Research and Development, St. Patrick Institute of Medical Sciences, Columbus, OH, USA 3. Ocupational Medicine - Integrative Functional Medicine, Brazilian Air Force, Sao Paulo, BRA

Corresponding author: Eduardo P. Beltran Monasterio, dreduardobeltran@yahoo.com

Abstract

This clinical case study investigates the relationship between the Vitamin D receptor (VDR) and psoriasis using Dr. Eduardo Beltran's "Leaky Gut Syndrome (LGS) Protocol." The intervention, combining an anti-inflammatory diet, high-dose vitamin D supplementation, and antimicrobial herbs (particularly oregano oil and turmeric), targeted small intestinal fungal overgrowth induced by Candida. Immunofluorescence analysis of VDR expression in skin biopsies was conducted before and after the intervention. Initial biopsy revealed reduced VDR expression correlating with persistent psoriasis. After four months, significant clinical improvement and increased VDR expression were observed in the follow-up biopsy. Significant improvements were also observed in a follow-up microbiome test. The study explores turmeric's integration for its anti-inflammatory and anti-microbial properties, emphasizing implications for managing chronic inflammatory disorders like psoriasis. The findings support the efficacy of an anti-inflammatory diet in reducing intestinal hyperpermeability, increasing VDR expression, and offer innovative insights for therapeutic strategies in resistant psoriasis.

O Futuro da Medicina Integrativa: Imunofluorescência, Microbioma e Vitamina D

1. Imunofluorescência: um marco inovador

- ❑ Evidencia que **LPS bacteriano** (disbiose → hiperpermeabilidade) **inibe a expressão dos receptores de Vitamina D (VDR)**.
- ❑ Explica o fenômeno da **resistência à Vitamina D**: **↓ VDR = ↓ resposta ao calcitriol**, mesmo com doses elevadas.

2. Modulação Intestinal reduz a resistência à Vitamina D

- ❑ Correção da disbiose → **menos LPS → mais VDR**.
- ❑ Renovação da mucina (Akkermansia, Roseburia, Faecalibacterium).
- ❑ **Redução natural da necessidade de altas doses de Vitamina D**.
- ❑ Conceito introduzido: **"VDR Renewal through Anti-inflammatory Diet"**.

3. Por que isso representa inovação mundial

- ❑ Integra **microbioma + imunomodulação + epigenética**. **(LGS Protocol)**
- ❑ Demonstra que **não existe modulação imunológica eficaz sem modulação intestinal**.
- ❑ Define novo paradigma clínico: **tratar a barreira intestinal é tratar o sistema imune**.

4. Sequenciamento genômico do microbioma: estar 15–20 anos à frente.

- ❑ **Profissionais que usam genômica e Vit. D estão décadas à frente.**
- ❑ Quem não utiliza → **perde 90% dos dados clínicos essenciais**.

O Futuro da Medicina Integrativa: Imunofluorescência, Microbioma e Vitamina D

5. Direções futuras da Medicina Integrativa

- ❑ Genômica + epigenômica + microbioma + IA clínica.
- ❑ Medicina de precisão aplicada ao intestino, imunidade como abordagem terapeutica.

Modulação do Microbioma

Modulação do Sistema Imune

Compensação Epigenética

O Futuro da Medicina Integrativa: Imunofluorescência, Microbioma e Vitamina D

THE LGS PROTOCOL

THE LEAKY GUT SYNDORME PROTOCOL

“O futuro da medicina pertence a quem entende o microbioma, a epigenética e o papel central da vitamina D.”

Dr. Eduardo Beltran

CONGRESSO INTERNACIONAL
NUTRIÇÃO INTEGRATIVA FUNCIONAL

2025

Muito Obrigado!

Dr. Eduardo Patrick Beltran Monasterio

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