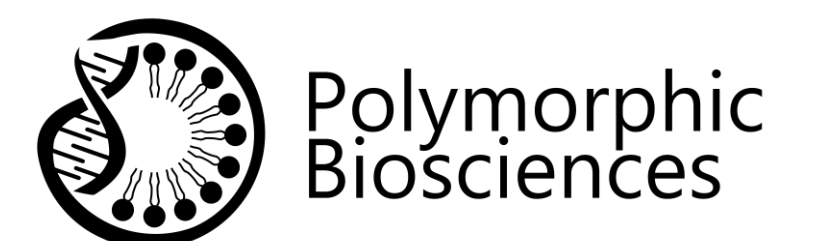


# An Intelligence Layer Changing How We Use Clinical Data

Dr. Mauricio Medrano, MD, PhD  
Vice-President, Medical Affairs, Polymorphic Biosciences

26th Annual Healthcare Summit • May 25-26, 2026 • Vancouver, BC Canada



← ALL PERSPECTIVES

PERSPECTIVE • PORTFOLIO • REPORT

# 2025: The State of AI in Healthcare

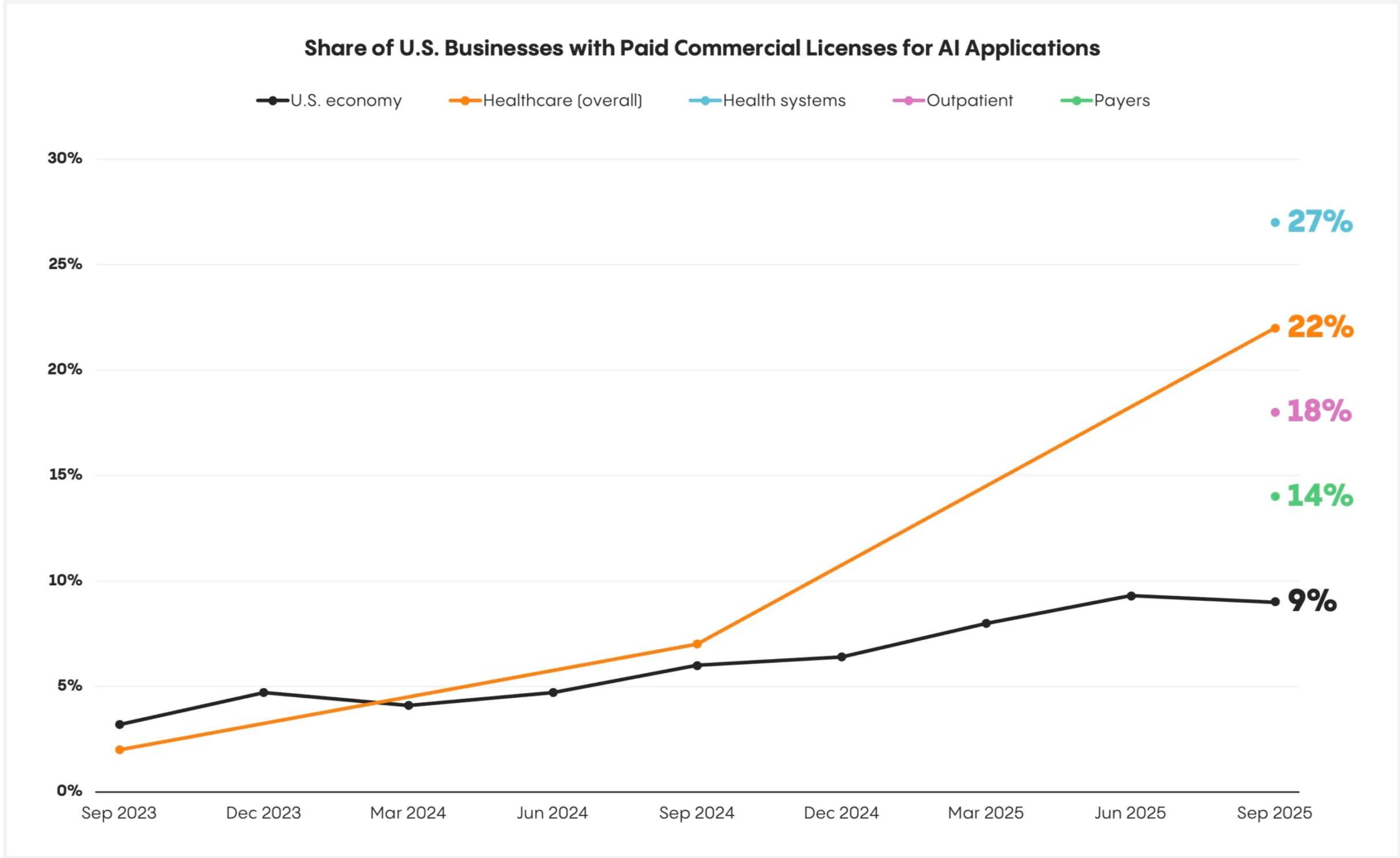
📅 October 21, 2025

👤 [Greg Yap](#), [Derek Xiao](#), [Johnny Hu, Ph.D.](#), [JP Sanday](#), [Croom Beatty](#)



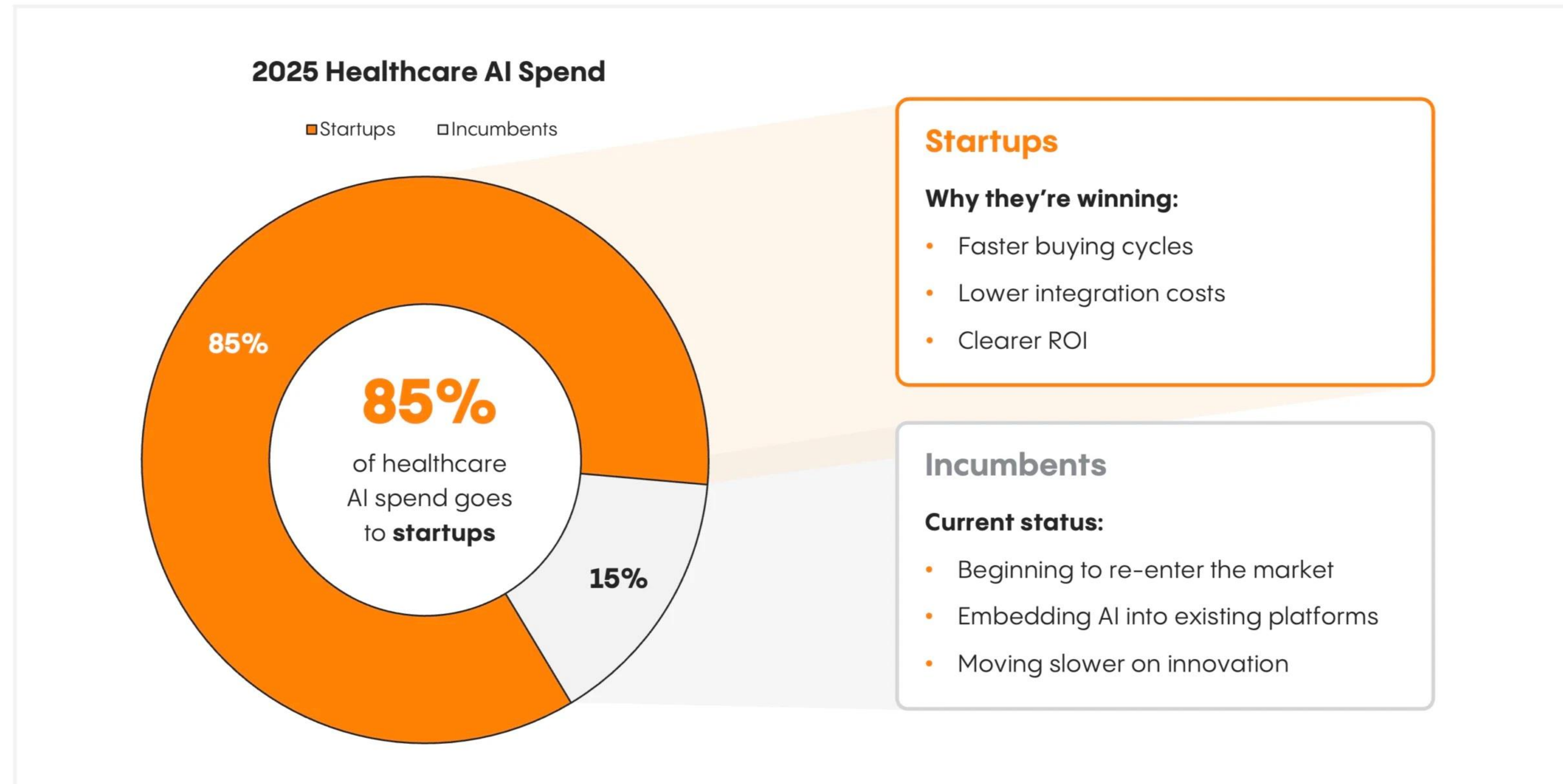
# Healthcare Is Winning the AI Race

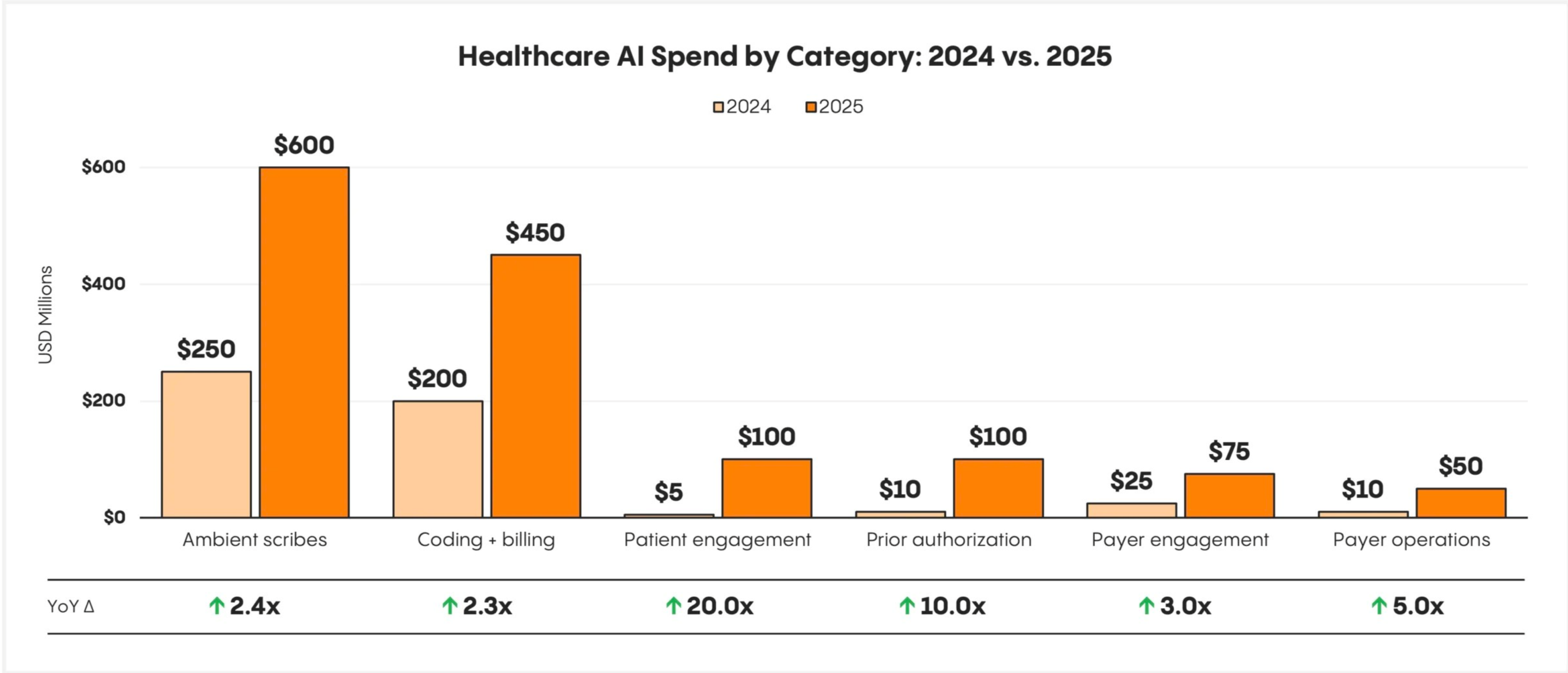
22% of healthcare organizations have deployed commercial AI—more than double the 9% adoption rate across the U.S. economy



# Healthcare AI Spend: **Startups vs. Incumbents**

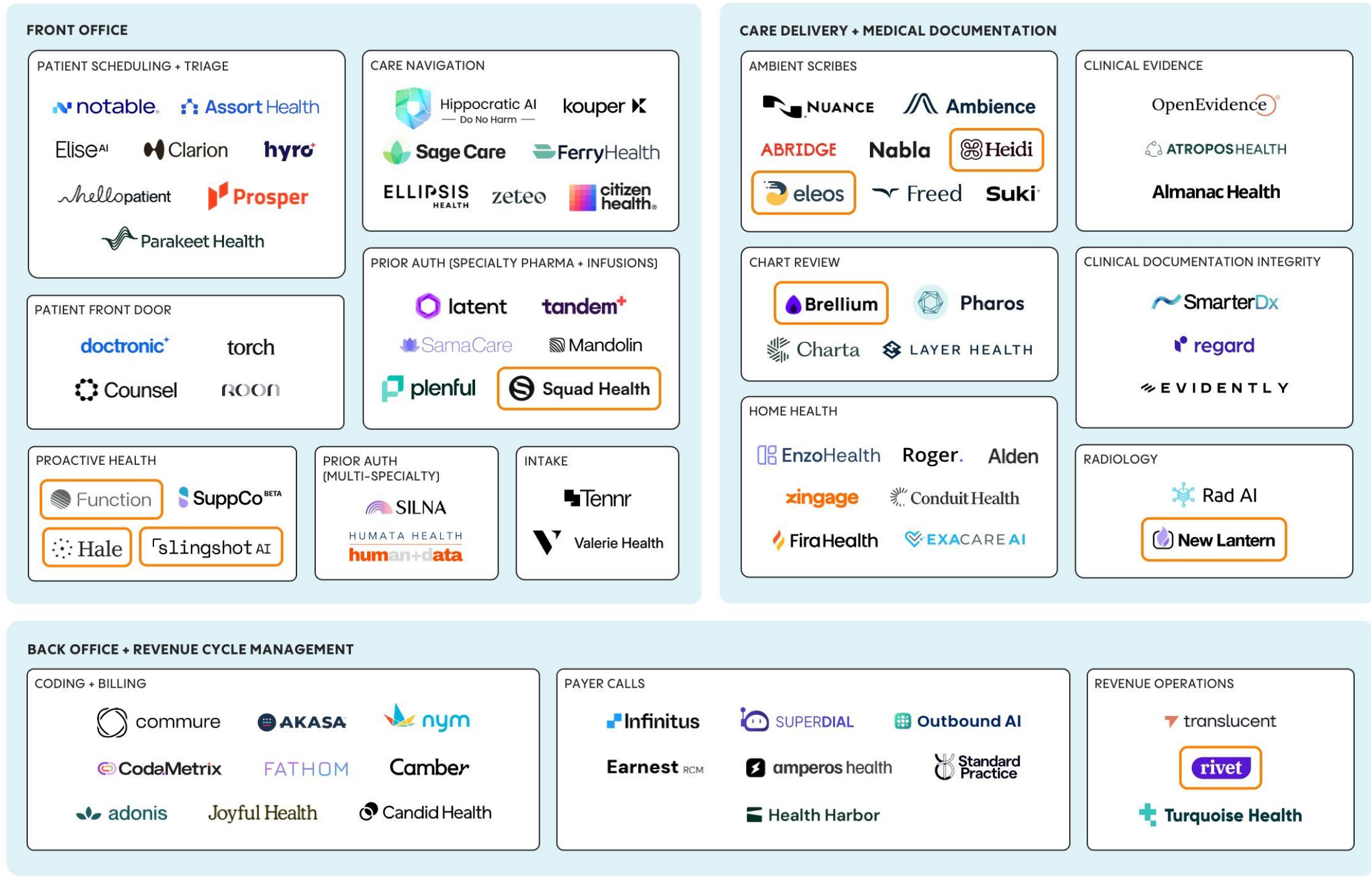
Startups capture the vast majority of production AI spend, benefitting from agile deployment, transparent pricing, and proven ROI—giving them a decisive edge over slower-moving incumbents



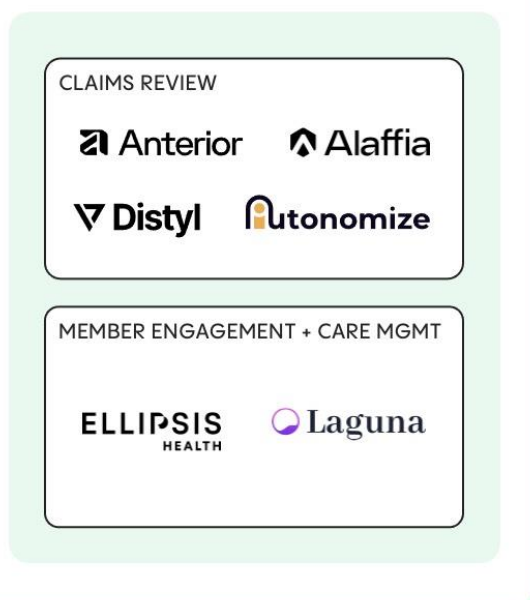


# Healthcare AI Market Map

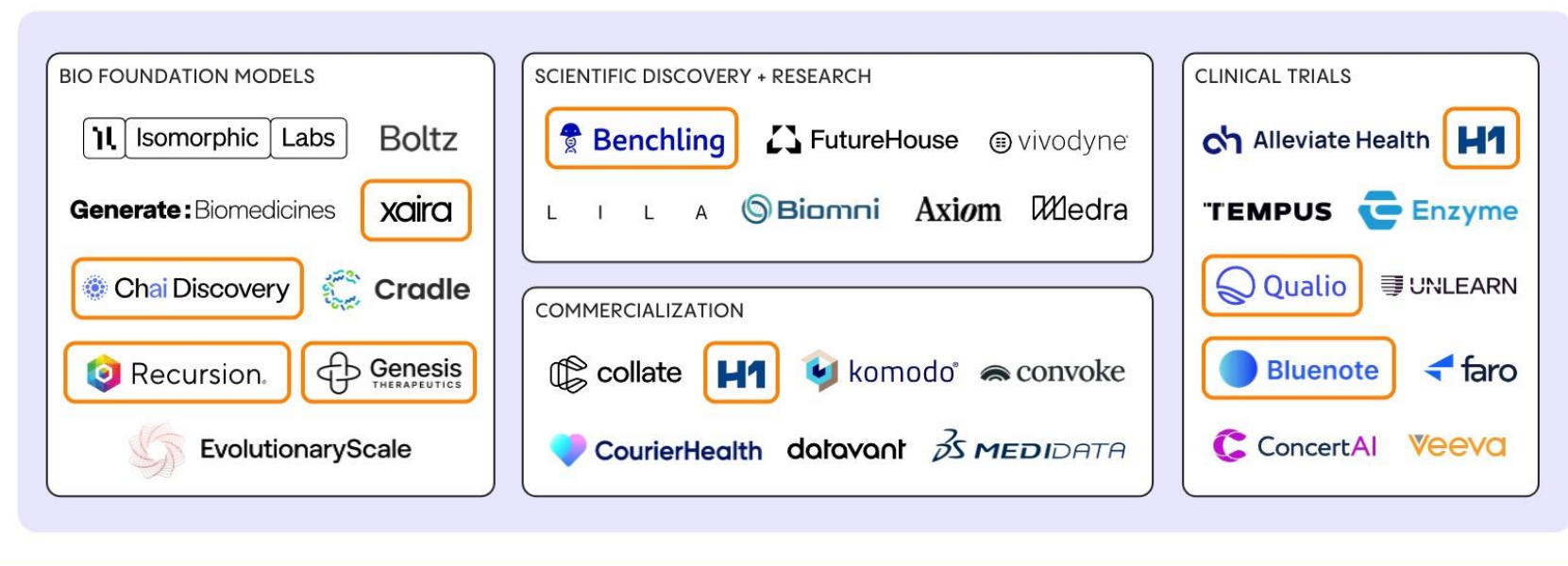
## Providers



## Payers

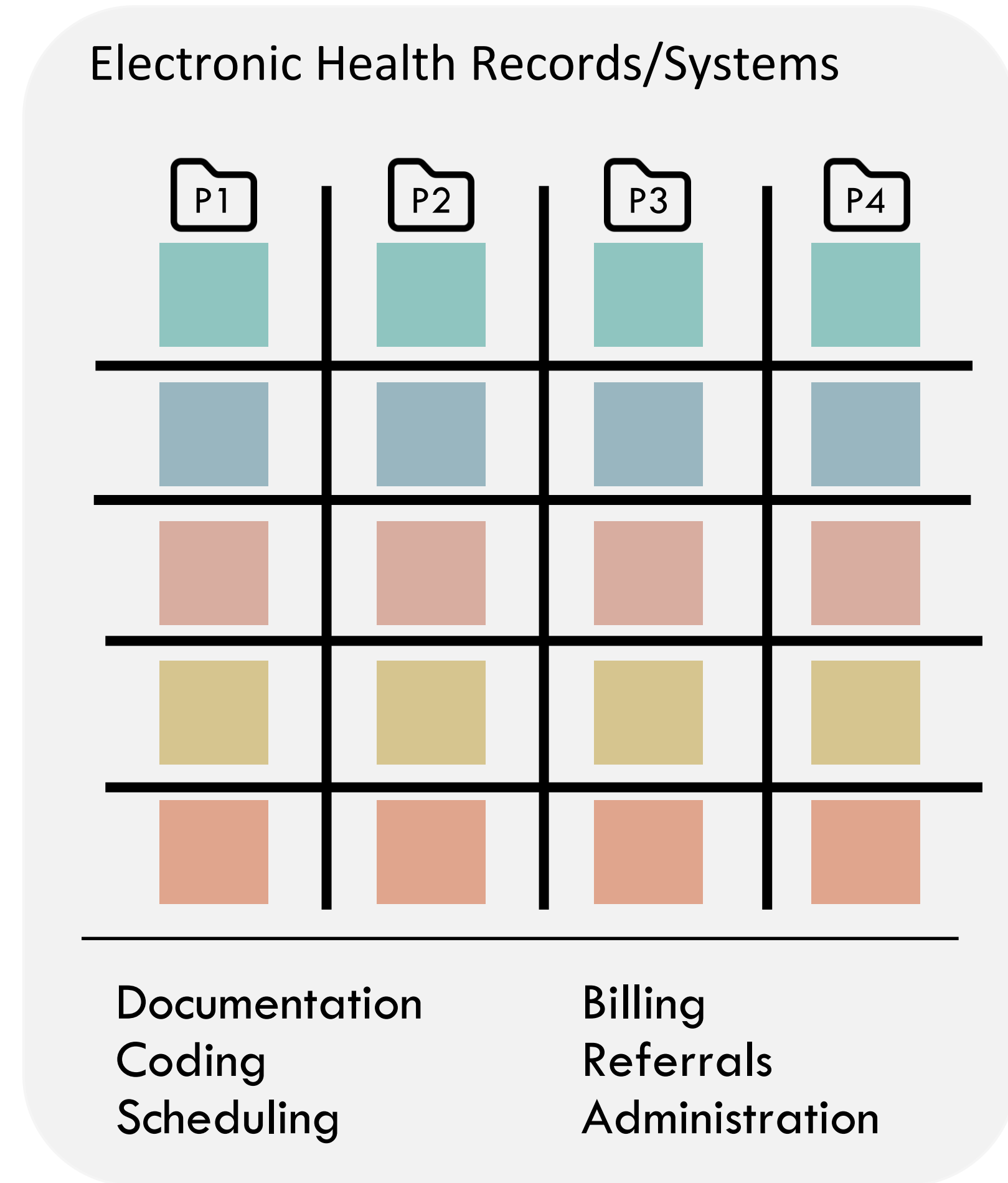
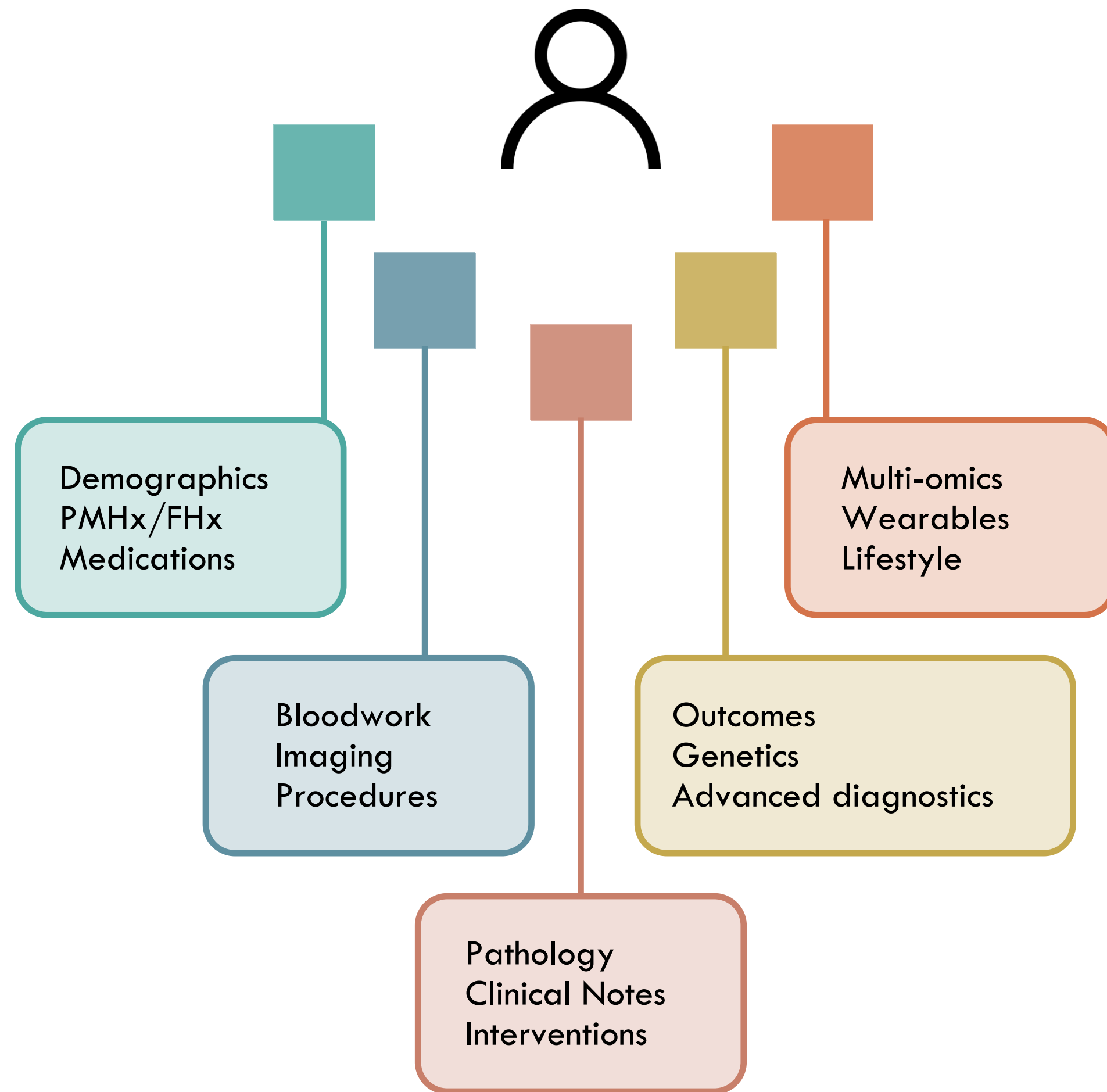


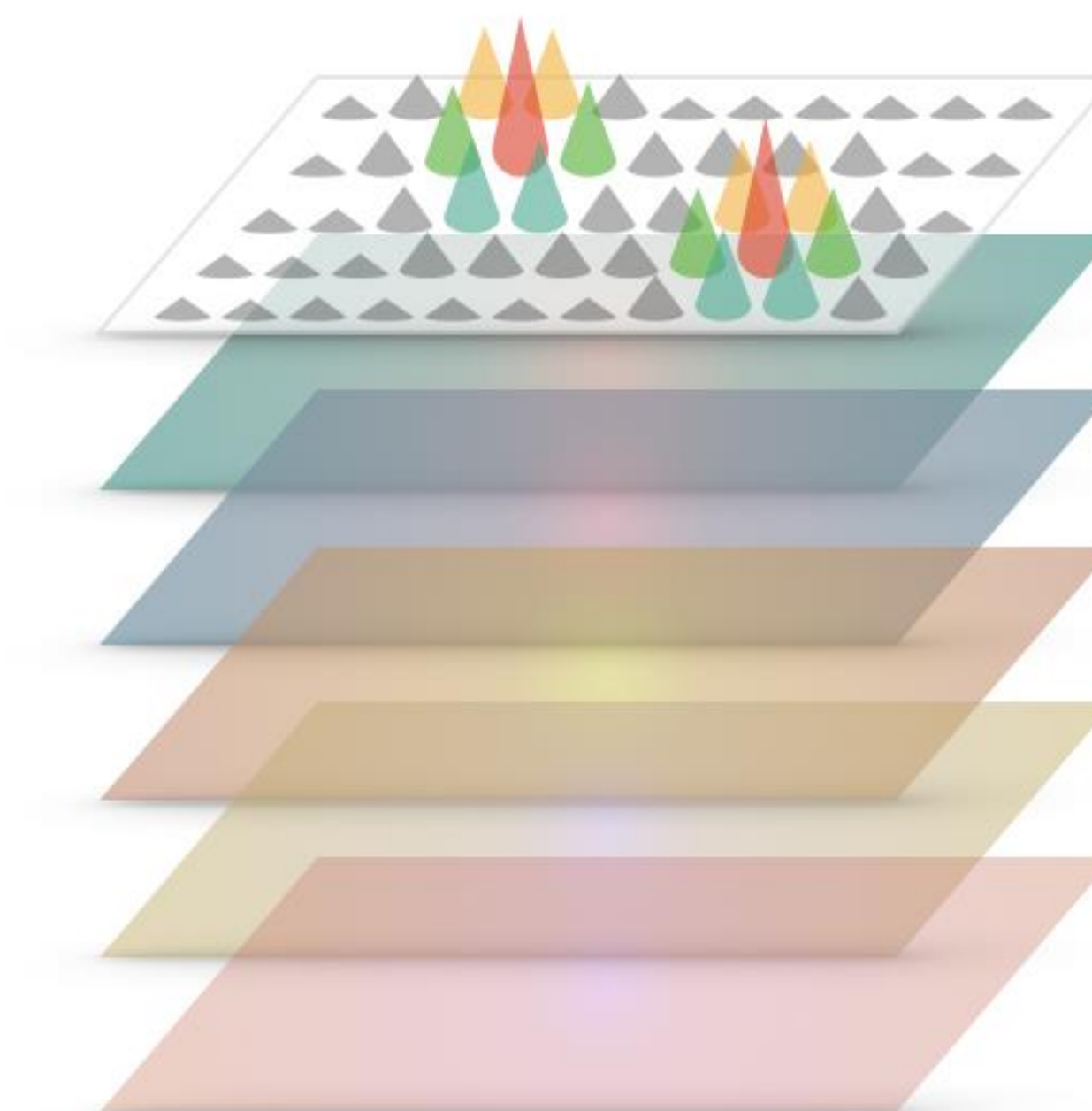
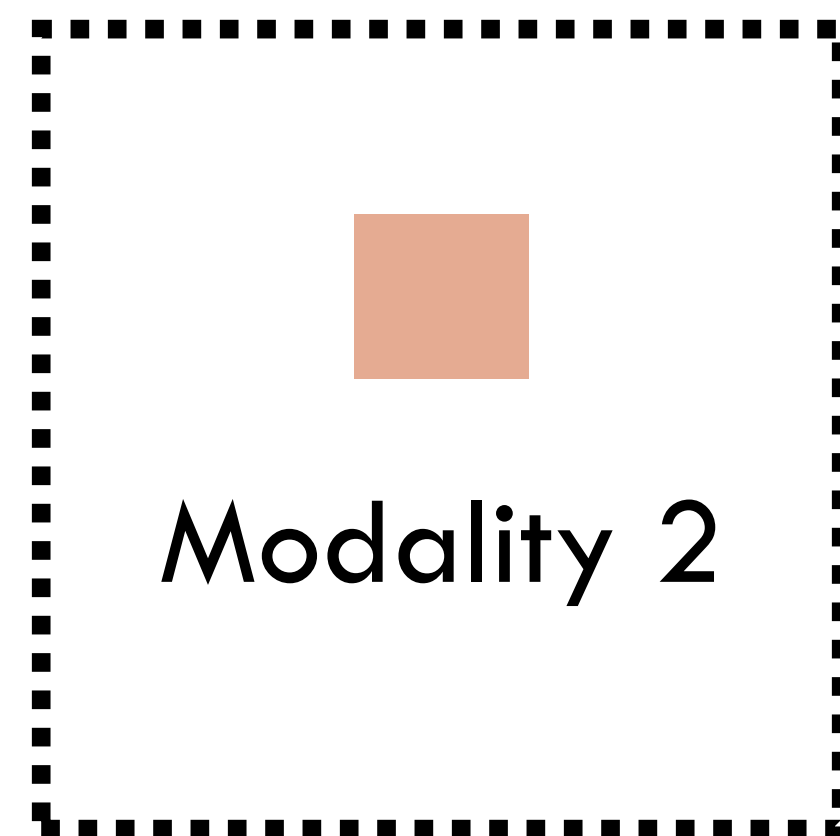
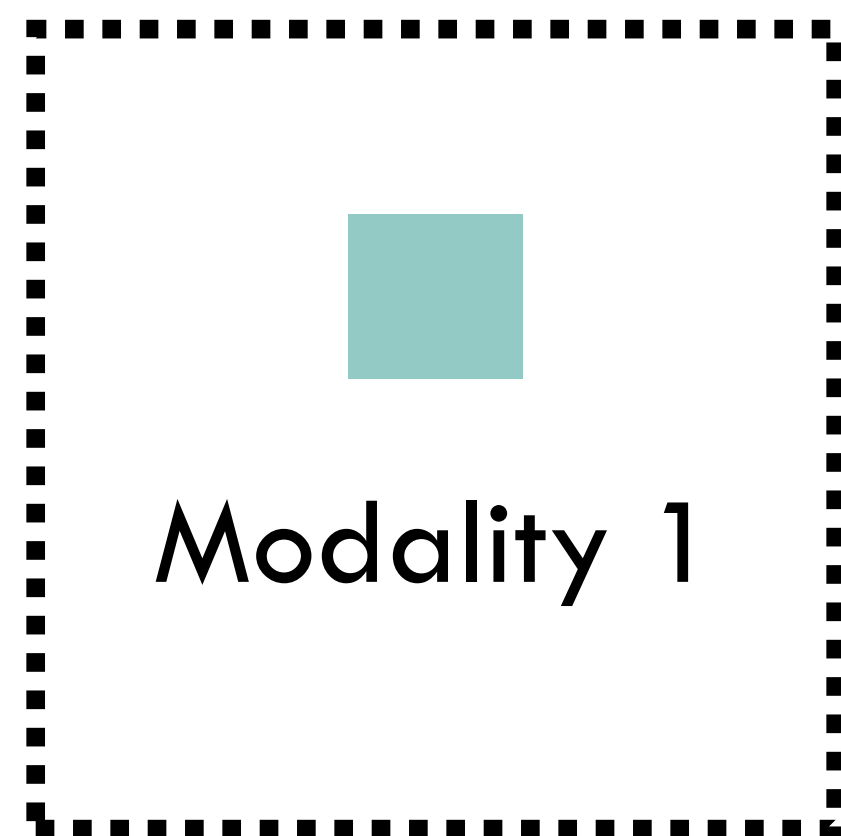
## Life Sciences



There's a deeper layer with less attention. The data itself.

# EMRs are built for data storage, not reasoning





AI is helping us build more advanced tools to address this problem.  
Important to know where and how to use it.

# How to think about AI

- ▶ Remarkable at language, pattern recognition, and synthesis.
- ▶ Useful where ambiguity needs to be resolved or interpretation matters.
- ▶ Not the right tool for computations, where precision and transparency matter.
- ▶ Different tools for different jobs.

# Where do you start?

- ▶ Big problem, can't be solved all at once. Start in one clinic.
- ▶ Partnering with Connect Health, a precision and preventive medicine clinic.
- ▶ Single clinic, deep longitudinal data per individual, relatively small cohort.
- ▶ Deploy quicker, immediate feedback, iterate/improve.



First problem: the clinic needed a system.

- Dashboard
- Patients ▼
  - All Patients
  - Register Patient
- Test Tracking >
- Import Results
- Explore

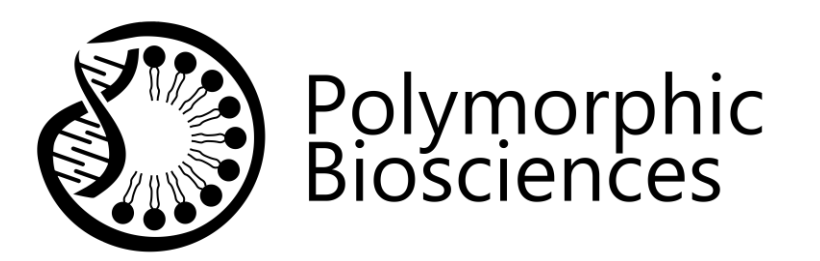
Template Management >

Users & access

PHN	Patient <span style="font-size: small;">↑↓</span>	Contact	Demographics	Last Visit	Actions
9010011002	<b>Barbara Jackson</b> <small>ID: uktxeht</small>	barbara.jackson@example.com +1-416-555-2011	<b>FEMALE</b> 71y • 05/11/55	Mar-26 Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010016015	<b>Charles Garcia</b> <small>ID: hbg7w5xz</small>	charles.garcia@example.com +1-416-555-2016	<b>MALE</b> 53y • 05/11/73	Feb-26 Executive Health Baseline + Diabetes Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010004001	<b>David Davis</b> <small>ID: l2fv6gua</small>	david.davis@example.com +1-416-555-2004	<b>MALE</b> 58y • 05/11/68	Feb-26 Diabetes Monitoring + Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010019001	<b>Dorothy Perez</b> <small>ID: q5c6t2wd</small>	dorothy.perez@example.com +1-416-555-2019	<b>FEMALE</b> 72y • 05/11/54	Mar-26 Executive Health Imaging + Diabetes Monitoring + Cardiac Monitoring + Kidney Function Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010009014	<b>Elizabeth Anderson (Lizzy)</b> <small>ID: hjvg41oe</small>	elizabeth.anderson@example.com +1-416-555-2009	<b>FEMALE</b> 56y • 05/11/70	Feb-26 Optimize 360° Advanced Testing + Diabetes Monitoring + Kidney Function Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010010009	<b>James Thomas</b> <small>ID: 83g3atip</small>	james.thomas@example.com +1-416-555-2010	<b>MALE</b> 50y • 05/11/76	Apr-26 Optimize 360° Year 1 Add-Ons + Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010005005	<b>Jennifer Miller</b> <small>ID: 6yytbn2</small>	jennifer.miller@example.com +1-416-555-2005	<b>FEMALE</b> 29y • 05/11/97	Jan-26 Insight Core Diagnostics + Thyroid Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010015007	<b>Jessica Thompson (Jessy)</b> <small>ID: pzroh1on</small>	jessica.thompson@example.com +1-416-555-2015	<b>FEMALE</b> 26y • 05/11/00	Mar-26 Optimize 360° Onboarding Baseline	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010000007	<b>John Smith</b> <small>ID: s5nbbuvq</small>	john.smith@example.com +1-416-555-2000	<b>MALE</b> 52y • 05/11/74	Feb-26 Signature Baseline Assessment + Diabetes Monitoring + Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010014003	<b>Joseph Martin</b> <small>ID: 5yhmaens</small>	joseph.martin@example.com +1-416-555-2014	<b>MALE</b> 64y • 05/11/62	Mar-26 Diabetes Monitoring + Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010007002	<b>Linda Moore</b> <small>ID: 52gudfyx</small>	linda.moore@example.com +1-416-555-2007	<b>FEMALE</b> 62y • 05/11/64	Mar-26 Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010001015	<b>Mary Johnson</b> <small>ID: zf9jkwus</small>	mary.johnson@example.com +1-416-555-2001	<b>FEMALE</b> 34y • 05/11/92	Mar-26 Signature 6-Month Monitoring + Thyroid Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010006009	<b>Michael Wilson (Mike)</b> <small>ID: 27xd7avq</small>	michael.wilson@example.com +1-416-555-2006	<b>MALE</b> 47y • 05/11/79	Apr-26 Diabetes Monitoring + Cardiac Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010003008	<b>Patricia Brown (Trish)</b> <small>ID: tcxnsegs</small>	patricia.brown@example.com +1-416-555-2003	<b>FEMALE</b> 45y • 05/11/81	Dec-25 Signature 6-Month Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010012006	<b>Richard White (Richy)</b> <small>ID: e1m6oatz</small>	richard.white@example.com +1-416-555-2012	<b>MALE</b> 55y • 05/11/71	Mar-26 Optimize 360° Advanced Testing + Cardiac Monitoring + Kidney Function Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>
9010002004	<b>Robert Williams</b> <small>ID: pj8m5jyl</small>	robert.williams@example.com +1-416-555-2002	<b>MALE</b> 68y • 05/11/58	Feb-26 Cardiac Monitoring + Kidney Function Monitoring	View <span style="border: 1px solid #ccc; border-radius: 3px; padding: 2px 5px;">Patient Hub</span> <span style="font-size: small;">⋮</span>

1-20 of 20 25 per page

< 1 / 1 >



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  - Register Patient
- Test Tracking >
- Import Results
- Explore
  
- Template Management >
  
- Users & access

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**Barbara Jackson** • PHN: 9010011002 • ID: UKTXEHPT • 71 yrs, F • Optimize 360°

[Edit](#) [Import](#)

[Overview](#) [Personal Information](#) [Patient Hubs](#) In Progress [Visits](#) [Test Tracking](#) [Results](#) [Medications](#) 8 [Health History](#)

### Visits

[+ New Visit](#)

All Types ▼

**Mar 24, 2026** Routine Cardiac Monitoring

[View →](#)

2/2 tests completed

Cardiac Monitoring

**Dec 24, 2025** Routine Optimize 360° Year 1 Add-Ons + Cardiac Monitoring + Thyroid Monitoring

[View →](#)

4/4 tests completed

3 bundle(s): Optimize 360° Year 1 Add-Ons, Cardiac Monitoring, Thyroid Monitoring

**Sep 24, 2025** Routine Optimize 360° Advanced Testing + Cardiac Monitoring

[View →](#)

10/10 tests completed

2 bundle(s): Optimize 360° Advanced Testing, Cardiac Monitoring

**Jun 24, 2025** Annual Optimize 360° Onboarding Baseline + Cardiac Monitoring + Thyroid Monitoring

[View →](#)

16/16 tests completed

3 bundle(s): Optimize 360° Onboarding Baseline, Cardiac Monitoring, Thyroid Monitoring

**Mar 24, 2025** Routine Cardiac Monitoring

[View →](#)

2/2 tests completed

Cardiac Monitoring

**Dec 24, 2024** Routine Cardiac Monitoring + Thyroid Monitoring

[View →](#)

3/3 tests completed

2 bundle(s): Cardiac Monitoring, Thyroid Monitoring

**Sep 24, 2024** Routine Cardiac Monitoring

[View →](#)

2/2 tests completed

Cardiac Monitoring

### Test Results & Biomarkers

70 Biomarkers 83 Completed Tests

Search biomarkers...

**ADMA (Asymmetric dimethylarginine)** Optimal

**75.63 ng/mL**

Sep 25, 2025

**Alanine Aminotransferase** Normal

**44.39 U/L**

Sep 25, 2025

**ApoE Genotype** Out of Range

**3/4**

Sep 25, 2025

**Apolipoprotein B** Optimal

**77.04 mg/dL**

Sep 25, 2025

**Appen. Lean/Height<sup>2</sup> (kg/m<sup>2</sup>)** 1

**60.26**

Jun 25, 2024

**Aspartate Aminotransferase** Normal

**31.2 U/L**

Sep 25, 2025

**Basophils** Normal

**0.12 10<sup>9</sup>/L**

Sep 25, 2025

**C Reactive Protein** Normal

**3.87 mg/L**

Mar 25, 2026

**Cholesterol** Normal

**2.95 mmol/L**

Mar 25, 2026

**Coenzyme Q10** Optimal

### ADMA (Asymmetric dimethylarginine)

3M 6M 1Y **All**

5 test results

Latest Value

**75.63 ng/mL**

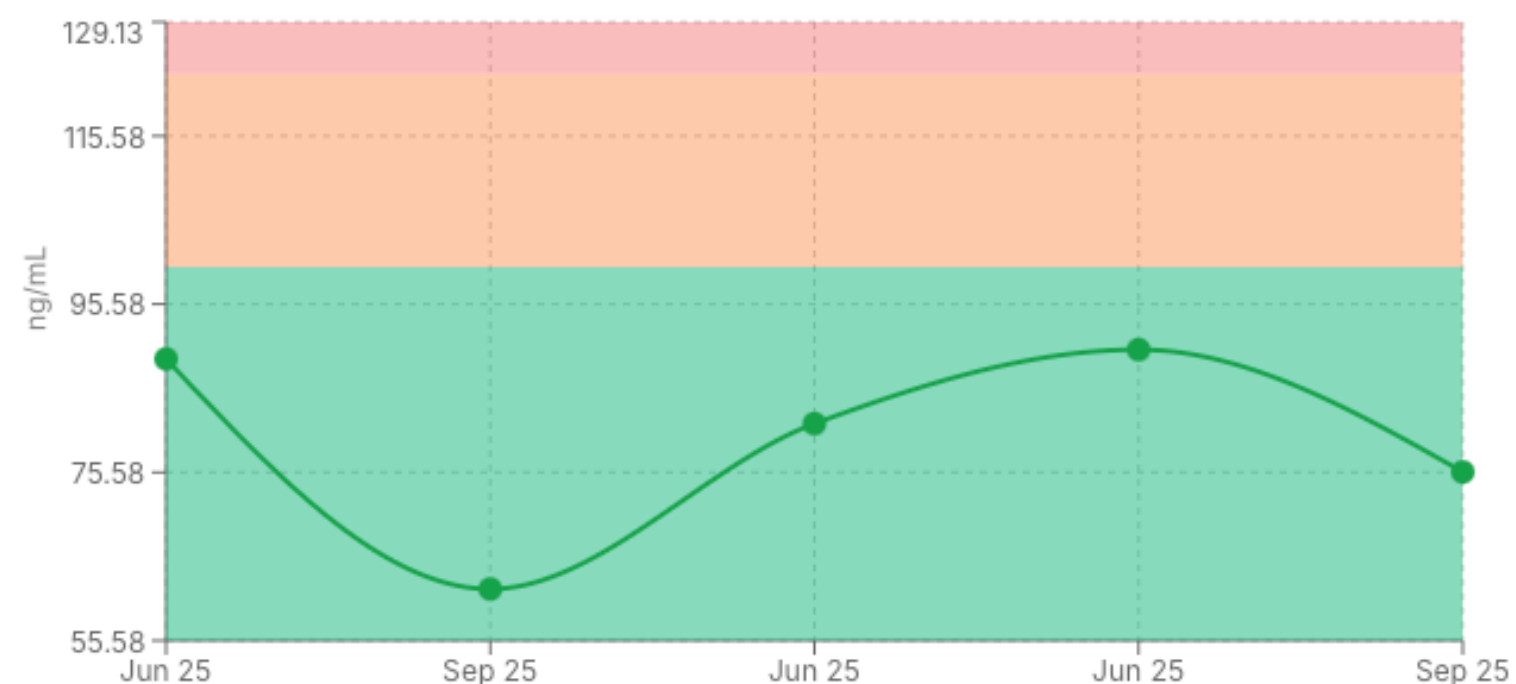
Sep 25, 2025

Reference Ranges

- **Optimal** < 100 ng/mL
- **Suboptimal** 100 ng/mL - 123 ng/mL
- **Needs Attention** > 123 ng/mL

#### Trend Analysis

Range bands reflect the current reference ranges



● Optimal ● Suboptimal ● Needs Attention

#### Historical Values

- **75.63 ng/mL** ● Optimal (< 100 ng/mL) Optimal  
Sep 25, 2025 7:36 AM UTC
- **90.17 ng/mL** Optimal  
Jun 25, 2025 7:32 AM UTC
- **81.37 ng/mL** ● Optimal (< 100 ng/mL) Optimal  
Jun 25, 2024 7:33 AM UTC

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**Barbara Jackson** • PHN: 9010011002 • ID: UKTXEHPT • 71 yrs, F • Optimize 360°

[Edit](#) [Import](#)

Overview Personal Information Patient Hubs **In Progress** Visits Test Tracking Results Medications **8** Health History

### Medications Management

All (8) Active (8) Past (0)

#### Active Medications

##### Vitamin D3 ACTIVE

Dosage: 2000 IU

Frequency: Once daily

Route: ORAL

Start Date: Feb 22, 2026

Notes: Supplement for vitamin D deficiency

Prescribed by: Dr. Dr. Michael Thompson • Linked to review session

##### Clopidogrel ACTIVE

Dosage: 75mg

Frequency: Once daily

Route: ORAL

Start Date: Nov 25, 2025

Notes: Antiplatelet therapy

Prescribed by: Dr. Dr. Michael Thompson • Linked to review session

##### Aspirin ACTIVE

Dosage: 81mg

Frequency: Once daily

Route: ORAL

Start Date: Nov 07, 2025

Notes: Low-dose for cardiovascular protection

Prescribed by: Dr. Dr. Michael Thompson • Linked to review session

##### Ondansetron ACTIVE

Dosage: 4mg

Frequency: Every 8 hours as needed

Route: ORAL

Start Date: Oct 26, 2025

Notes: For nausea/vomiting

**Side Effects:**  
May cause headache, constipation

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[Edit](#) [Import](#)

Overview Personal Information Patient Hubs **In Progress** Visits Test Tracking Results Medications 8 **Health History**

30 Personal 14 Family

Search conditions... [+ Add](#)

Cardiovascular 5

Personal 3 + Add Family 2 + Add

- Hypertension: Diagnosed 5 years ago, BP averaging 128/82, stable with medication May 2026
- Atrial Fibrillation: Rate controlled, monitored with regular ECGs May 2026
- Heart Failure: NYHA Class II, EF 45%, managed by cardiology team May 2026
- Heart Disease: Father diagnosed at age 55, had bypass surgery May 2026
- Stroke: Maternal grandmother at age 72 May 2026

Metabolic Health 5

Personal 3 + Add Family 2 + Add

- Obesity: BMI 32, enrolled in weight management program May 2026
- Prediabetes: Lifestyle modifications initiated, quarterly monitoring May 2026
- Metabolic Syndrome: Diet and exercise counseling provided, improving May 2026
- Obesity: Multiple family members affected May 2026
- Metabolic Syndrome: Mother diagnosed in her 50s May 2026

Cancer Screening 4

- Dashboard
- Patients ▼
  - All Patients
  - Register Patient
- Test Tracking >
- Import Results
- Explore
- Template Management >
- Users & access
- Admin User  
admin@connecthealth.ca

### Cardiovascular 7 new Out of Range

3 personal  
Hypertension: Diagnosed 5 years ago, BP averaging 128/82, stable...  
Atrial Fibrillation: Rate controlled, monitored with regular ECGs

2 family  
Heart Disease: Father diagnosed at age 55, had bypass surgery  
Stroke: Maternal grandmother at age 72

Cardiovascular: out of reference range.

- Lipids Out of Range
- Inflammatory Markers Out of Range
- > 6 more sub-categories (not assessed)

Active plans

- Cardiac Care Action Plan Urgent
- Hypertension Management Plan High
- Annual Cardiovascular Risk Assessment Medium

[View Category →](#)

### Metabolic Health Not Assessed

3 personal  
Obesity: BMI 32, enrolled in weight management program  
Prediabetes: Lifestyle modifications initiated, quarterly monitoring

2 family  
Obesity: Multiple family members affected  
Metabolic Syndrome: Mother diagnosed in her 50s

> 4 more sub-categories (not assessed)

Active plans

- Metabolic Health Optimization Medium

[View Category →](#)

### Cancer Screening Not Assessed

2 personal  
Breast Cancer: Stage II, in remission 5 years, annual surveillance  
Colon Polyps: Removed during colonoscopy, repeat in 3 years

2 family  
Colon Cancer: Grandfather diagnosed at age 70  
Lung Cancer: Uncle, heavy smoker, diagnosed at age 60

> 10 more sub-categories (not assessed)

[View Category →](#)

### Whole Body MRI Not Assessed

2 personal  
Disc Bulge: L4-L5 bulge identified, asymptomatic, physiotherapy...  
Thyroid Nodule: Small nodule on MRI, ultrasound follow-up arranged

### Brain Screening Not Assessed

3 personal  
Anxiety: Generalized anxiety disorder, therapy and medication  
Migraine: Episodic migraines, trigger identification ongoing

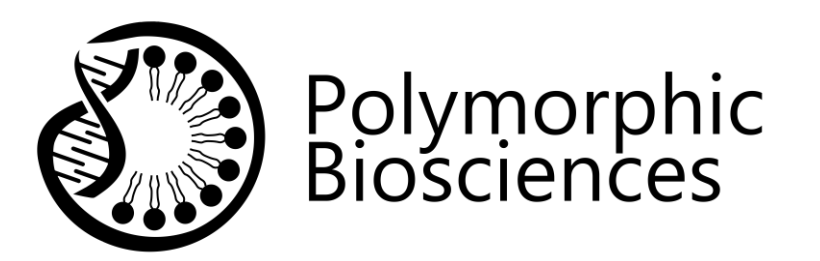
### Musculoskeletal Not Assessed

3 personal  
Chronic Back Pain: L4-L5 disc herniation, conservative management  
Fibromyalgia: Multimodal therapy approach, pain clinic referral

- Overview
- Cardiovascular 7 new
- Metabolic Health
- Cancer Screening
- Whole Body MRI
- Brain Screening
- Musculoskeletal
- Hormones
- Nutrition 1 new
- Toxins
- Medical Checklist

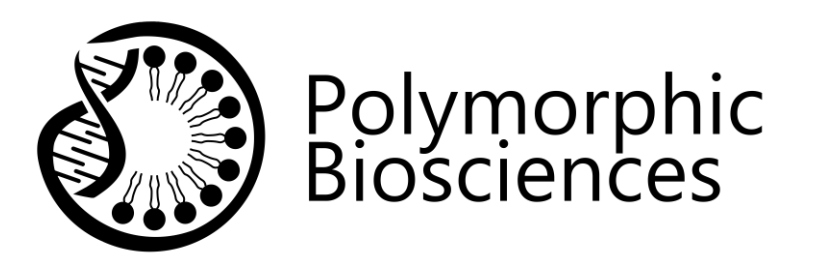
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Result	Provider	Unit	Range	Latest	Mar-26 Cardiac Monitoring	Dec-25 Optimize 360° Year 1...	Sep-25 Optimize 360° Adva...	Jun-25 Optimize 360° Onbo...	Mar-25 Cardiac Monit
GENETICS					Not Assessed				
ApoE Genotype	Cleveland HeartLab	-	● 3/3	Sep-25 3/4	-	-	Out of Range 3/4	Suboptimal 3/3	-
Lp(a)	Cleveland HeartLab	nmol/L	● ≤ 75	Sep-25 80.27	-	-	80.27	78.62	-
LIPIDS					Out of Range				
Cholesterol	LifeLabs	mmol/L	○ 2 - 5.19	Mar-26 2.95	2.95	3.17	3.52	3.95	3.57
LDL Cholesterol	LifeLabs	mmol/L	○ 1.5 - 3.4	Mar-26 3.97	3.97	3.89	3.78	3.94	3.87
LDL-P	Cleveland HeartLab	nmol/L	● ≤ 935	Sep-25 1020.58	-	-	1020.58	1021.25	-
Apolipoprotein B	Cleveland HeartLab	mg/dL	● ≤ 90	Sep-25 77.04	-	-	77.04	67.07	-
HDL Cholesterol	LifeLabs	mmol/L	○ ≥ 0.99	Mar-26 0.87	0.87	0.84	0.92	0.86	0.88
HDLfx pCAD Score	Cleveland HeartLab	-	● ≤ 0.9	Sep-25 0.32	-	-	0.32	0.32	-
Triglycerides	LifeLabs	mmol/L	○ ≤ 2.21	Mar-26 2.43	2.43	2.43	2.35	2.34	2.41
Non HDL Cholesterol	LifeLabs	mmol/L	-	Mar-26 89.82	89.82	83.15	91.25	82.11	61.8
TG/HDL-C	Cleveland HeartLab	calc	● ≤ 2	Sep-25 1.06	-	-	1.06	1.05	-
INFLAMMATORY MARKERS					Out of Range				
Lp-PLA2 Activity	Cleveland HeartLab	nmol/min/mL	● ≤ 123	Sep-25 95.43	-	-	95.43	92.79	-
Myeloperoxidase	Cleveland HeartLab	pmol/L	● ≤ 470	Sep-25 399.28	-	-	399.28	370.51	-
ADMA (Asymmetric dimethylarginine)	Cleveland HeartLab	ng/mL	● ≤ 100	Sep-25 75.63	-	-	75.63	90.17	-
OxLDL	Cleveland HeartLab	U/L	● ≤ 60	Sep-25 65.87	-	-	65.87	66.56	-



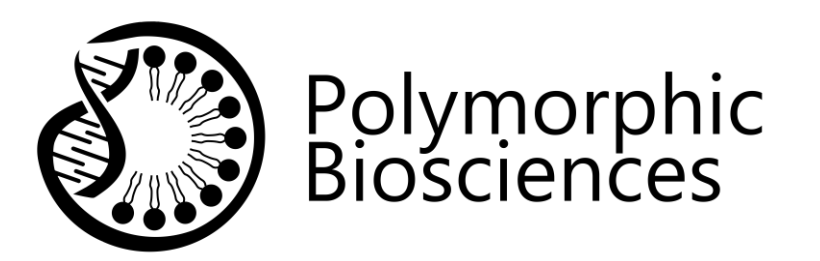
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Result	Provider	Unit	Range	Latest	Dec-25 Optimize 360° Year 1...
HEAD AND NECK				Not Assessed	Not Assessed
Sinuses and Mastoids	Prenuvo	-	-	Dec-25 Significant abnormality detected. Clinical correlation advised.	Significant abnormality detected. Clinical correlation advised.
Nasal Pharynx	Prenuvo	-	-	Dec-25 No significant abnormality detected.	No significant abnormality detected.
Oral Pharynx	Prenuvo	-	-	Dec-25 Minor abnormality detected. Clinical correlation advised.	Minor abnormality detected. Clinical correlation advised.
Hypopharynx	Prenuvo	-	-	Dec-25 Unremarkable findings. No intervention needed.	Unremarkable findings. No intervention needed.
Thyroid	Prenuvo	-	-	Dec-25 Unremarkable findings. No intervention needed.	Unremarkable findings. No intervention needed.
Cervical Lymph Node Chain	Prenuvo	-	-	Dec-25 Unremarkable findings. No intervention needed.	Unremarkable findings. No intervention needed.
BRAIN				Not Assessed	Not Assessed
Brain	Prenuvo	-	-	Dec-25 No significant abnormality detected.	No significant abnormality detected.
CHEST				Not Assessed	Not Assessed
Lungs and Mediastinum	Prenuvo	-	-	Dec-25 Minor abnormality detected. Clinical correlation advised.	Minor abnormality detected. Clinical correlation advised.
Heart and Great Vessels	Prenuvo	-	-	Dec-25 Significant abnormality detected. Clinical correlation advised.	Significant abnormality detected. Clinical correlation advised.



- Dashboard
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Result	Provider	Unit	Range	Latest		Jun-24 Optimize 360° Rene...
L-SPINE DENSITY				Not Assessed		Optimal
Lumbar Spine L1 Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	87.85	87.85
Lumbar Spine L2 Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	59.67	59.67
Lumbar Spine L3 Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	59.16	59.16
Lumbar Spine L4 Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	93.88	93.88
Lumbar Spine BMD T-Score	DEXA Scan	-	● ≥ -1	Jun-24	0	0
Lumbar Spine Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	51.39	51.39
L HIP DENSITY				Not Assessed		Optimal
Left Hip Neck BMD T-Score	DEXA Scan	-	● ≥ -1	Jun-24	0	0
Left Hip BMD T-Score	DEXA Scan	-	● ≥ -1	Jun-24	0	0
Left Hip Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	80.11	80.11
R HIP DENSITY				Not Assessed		Optimal
Right Hip Neck BMD T-Score	DEXA Scan	-	● ≥ -1	Jun-24	0	0
Right Hip BMD T-Score	DEXA Scan	-	● ≥ -1	Jun-24	0	0
Right Hip Bone Mineral Density	DEXA Scan	g/cm <sup>2</sup>	-	Jun-24	90.45	90.45
NUTRIENTS				-		-
25-Hydroxyvitamin D	LifeLabs	nmol/L	○ 75 - 250	-	-	-
RBC Magnesium	LifeLabs	mg/dL	○ ≥ 5.6	-	-	-
RBC Magnesium (NutrEval)	Genova	mcg/g	○ ≥ 56.5	-	-	-



- Dashboard
- Patients >
- Test Tracking >
- Import Results
- Explore

- Template Management ▾
  - Overview
  - Test Definitions
  - Biomarker Definitions
  - Imaging Types
  - Hub Templates
  - Providers
  - Membership Tiers

Users & access

- Basic Information
- Categories
- Table Preview

### Categories

Define the hierarchical category structure for this assessment

[+ Add Category](#) [Import from Health Data](#) [Expand All](#) [Collapse All](#)

Search categories...

- Cardiovascular** 8 27 1  
Heart and blood vessel health assessments
  - 8 Subcategories
    - Genetics** 2  
Genetic markers for cardiovascular risk
      - 2 Biomarkers
        - ApoE Genotype
        - Lp(a)
    - Lipids** 9 [+ Biomarkers](#) [+ Imaging](#) [+ Subcategory](#) [✎](#) [🗑](#)  
Lipid panel and cholesterol markers
      - 9 Biomarkers
        - Cholesterol x
        - LDL Cholesterol x
        - LDL-P x
        - Apolipoprotein B x
        - HDL Cholesterol x
        - HDLfx pCAD Score x
        - Triglycerides x
        - Non HDL Cholesterol x
        - TG/HDL-C x
    - Inflammatory Markers** 8  
Cardiovascular inflammation indicators
      - 8 Biomarkers
    - Blood Pressure** 4


# Configurable



- Dashboard
- Patients >
- Test Tracking >
- Import Results**
- Explore

Template Management >


Users & access

 Import a PDF lab report

Patient

 Barbara Jacks... PHN: 9010011002

 Import Lab Report

All Statuses 



No import jobs yet. Upload a PDF to get started.



- Dashboard
- Patients >
- Test Tracking >
- Import Results
- Explore
  
- Template Management >
  
- Users & access

Import a PDF lab report

Patient

Barbara Jacks... PHN: 9010011002

Import Lab Report

Search by patient name...

All Statuses



No import jobs yet. Upload a PDF to get started.

### Import Lab Report

Upload a PDF lab report to extract biomarker results

Test Provider

LifeLabs



Drag & drop a PDF, or click to browse


PDF files only, max 50MB

Upload & Extract

5b4fd70b-8aa0-4263-9d... 2 / 13 100%

NAME	RESULT	REF RANGE (UNITS)	ALERT	STATUS
WBC	6.9	4.0 - 10.0 <sup>10*9/L</sup>		F
RBC	<b>▲ 3.91</b>	4.20 - 5.40 <sup>10*12/L</sup>	A	F
Hemoglobin	138	135 - 170 <sup>g/L</sup>		F
Hematocrit	<b>▲ 0.39</b>	0.40 - 0.50 <sup>L/L</sup>	A	F
MCV	<b>▲ 101</b>	82 - 98 <sup>fl</sup>	A	F
MCH	<b>▲ 35.3</b>	27.5 - 33.5 <sup>pg</sup>	A	F
MCHC	351	300 - 370 <sup>g/L</sup>		F

Page 1 of 13



NAME	RESULT	REF RANGE (UNITS)	ALERT	STATUS
RDW	12.2	11.5 - 14.5 %		F
Platelet Count	214	150 - 400 <sup>10*9/L</sup>		F
Neutrophils	4.9	2.0 - 7.5 <sup>10*9/L</sup>		F
Lymphocytes	1.3	1.0 - 4.0 <sup>10*9/L</sup>		F
Monocytes	0.5	0.1 - 0.8 <sup>10*9/L</sup>		F
Eosinophils	0.1	0.0 - 0.7 <sup>10*9/L</sup>		F

Ordering Doctor

Select a doctor... ▾

Collection Date

08/31/2023 📅

Extracted Biomarkers (44)

+ Add Row

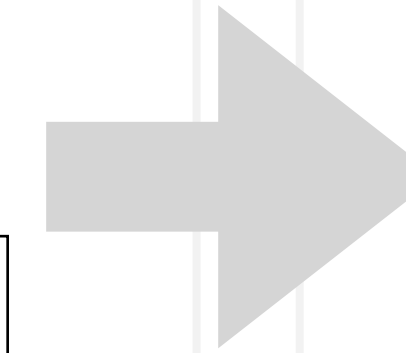
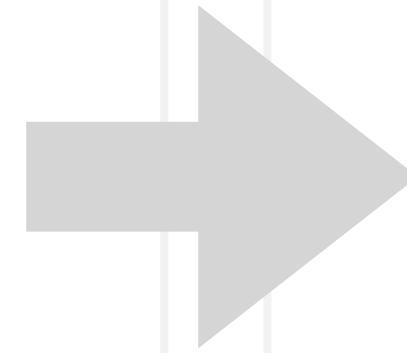
MCV <a href="#">Linked</a>	101	fl	82 - 98	82 - 98		
MCH <a href="#">Linked</a>	35.3	pg	27.5 - 33.5	27.5 - 33.5		
MCHC <a href="#">Linked</a>	351	g/L	292.55 - 360.82	<b>▲ 300 - 370</b>	Use PDF range ✓ Ignore	
RDW <a href="#">Linked</a>	12.2	%	11.5 - 14.5	11.5 - 14.5		
Platelet Count <a href="#">Linked</a>	214	10*9/L	150 - 400	150 - 400		
Neutrophils <a href="#">Linked</a>	4.9	10*9/L	2.1 - 7.87	<b>▲ 2.0 - 7.5</b>	Use PDF range ✓ Ignore	
Lymphocytes <a href="#">Linked</a>	1.3	10*9/L	1 - 4	1.0 - 4.0		
Monocytes <a href="#">Linked</a>	0.5	10*9/L	0.1 - 0.84	<b>▲ 0.1 - 0.8</b>	Use PDF range ✓ Ignore	
Eosinophils <a href="#">Linked</a>	0.1	10*9/L	0 - 0.7	0.0 - 0.7		

Notes

Optional notes about this import...

Approve & Import  Reject

# Data Extraction



```
def parse_test_row(line):
    # Clean up: remove trailing 'A F' or 'F'
    line = re.sub(r'\sA\s+Complete\s*-\s*F$', '', line).strip()
    line = re.sub(r'\s?Complete\s?-\s?F$', '', line).strip()
    line = re.sub(r'\sA F$', '', line).strip()
    line = re.sub(r'\sF$', '', line).strip()

    tokens = line.split()
    if len(tokens) < 2:
        return '', '', '', ''

    # Special rule: Single-line test, result + units, no Reference
    if len(tokens) == 3 and re.match(r'^[<>]?[d.]+$', tokens[1]) a
        test_name = tokens[0]
        result = tokens[1]
        ref_range = ''
        units = tokens[2]
        return test_name, result, ref_range, units

    # Handle 2-token rows: Test Name + Result
    if len(tokens) == 2:
        return tokens[0], tokens[1], '', ''
```

# Extraction is not enough. Data needs to be structured.

- ▶ Lab data has fields (test, result, unit), still needs transformation before computation
- ▶ Imaging reports are free text; no fields, structure, computable format
- ▶ Different data types require different approaches to become queryable

# Creating Structured Data: Inputs

Study:

<b>Time of scan:</b>	<b>Item:</b>		
male	Comprehensive whole body scan		
<b>Sex:</b>	<b>Height:</b>	<b>Weight:</b>	<b>Date of Birth:</b>
	6' 1"	180 pounds	
<b>Referring Clinician:</b>	<b>Facility:</b>	<b>Reason For Scan:</b>	
	Prenuvo Vancouver (Arc)	Being proactive	

## TECHNIQUE:

Head: Flair, TOF, 3DTI; Neck: Axial T2; Whole-body: T1, STIR, DWI; Spine: Sagittal T2; Chest/Abdomen/Pelvis: axial T2; Abdomen: Axial T2, Pelvis: Ax T2 Small FOV, DWI

## DISCUSSION:

The Prenuvo whole-body MRI screening: (1) can serve as an adjunct to, but is not intended to replace, other established evidence-based screening practices for early detection of specific malignancies (e.g. colonoscopy, dedicated breast imaging, Pap-smear screening for cervical cancer, low-dose chest CT for high risk patients), (2) is effective for visualization of solid lesions on the order of 1 cm or larger within the head, neck, chest, abdomen, and pelvis. As with any medical test, there are limitations, which make it impossible to detect all malignancies and disease conditions, (3) is generally sensitive and specific for detection of cerebral artery aneurysms on the order of 3 mm or greater in size, (4) does not evaluate the heart or heart vessels, (5) does not evaluate lung microarchitecture or pulmonary micronodules, (6) does not replace dedicated breast imaging for screening or diagnostic evaluation (e.g. mammography, breast ultrasound, breast MRI with contrast), (7) is limited in the evaluation of the gastrointestinal tract and does not replace endoscopy or colonoscopy (e.g. cannot detect bowel polyps), (8) is limited in its assessment of the large joints as the exam is not tailored for detailed evaluation of the joint ligaments, cartilage, menisci, and labrum, (9) should not be considered a primary screening modality of the skin. This is best assessed by direct physical examination, (10) is not intended to replace dedicated diagnostic imaging in the setting of specific clinical diagnostic questions.

## COMPARISON:

The patient had a previous scan on 31 August 2023. Key observations: Prior Prenuvo scan.

Study: 1

## FINDINGS:

### Head and Neck

 **Brain**  
2 findings 1 require moderate attention

The following was identified, and is generally unchanged from your previous study.

#### We detected lesions which are consistent with confluent chronic small vessel ischemia.

- The lesions are scattered throughout your pons.
- The lesions are scattered throughout your supratentorial white matter.

#### Discuss with your doctor how to manage your risk factors.

- Your cardiovascular health declines with age and this correlates with an increasing prevalence of small vessel ischemia.
- Controlling your blood pressure can help prevent progression.
- At a minimum, re-evaluation of the brain with a followup Prenuvo scan will be useful to determine if there is progression of these findings.

See Figure 1

#### There is a vascular normal variant configuration.

- There is a fetal type left posterior cerebral artery P1 segment of the Circle of Willis.

#### This is a normal anatomic variant and no action is required.

- This information is only relevant if you were to need brain surgery in the future.

No evidence of proximal intracranial arterial aneurysm.

No worrisome intracranial lesion is identified within the brain parenchyma.

The generalized brain parenchyma volume is normal for age.

 **Sinuses and mastoids**  
2 findings requires minor attention

Study:

 **Kidneys**  
2 findings 1 require moderate attention

The following was identified, and there have been changes since your previous study dated 31 August 2023.

#### We detected an indeterminant solid lesion.

- The lesion is located in the cortical upper pole of your right kidney. The lesion measured 1.5 cm in diameter. This has shown increase in size compared to the prior examination. The lesion appeared T1 hypointense, T2 hypointense.

#### This finding by imaging is indeterminant. Unfortunately we cannot characterize it on this test.

- Because the lesion cannot be characterized, discuss this finding with your doctor to create a surveillance/investigation plan.
- If you have symptoms or further concerns, then a dedicated study with contrast is suggested for further characterization. If this is found to be benign, ongoing Prenuvo scans can be helpful in monitoring as the current study can serve as a valuable new baseline.

See Figure 3

#### We detected multiple renal lesions that are consistent with cysts.

- There is a single cortical cyst located in interpolar region of the left kidney. The cyst measured 1.1 cm in diameter.
- There is a single cortical cyst located in lower pole of the right kidney. The cyst measured 2.7 cm in diameter.

#### This is a benign finding.

- No follow up is required unless you have pain or blood in the urine.
- This finding can be reassessed on your next scan.

There is no hydronephrosis.

 **Adrenals**  
1 finding require minor attention

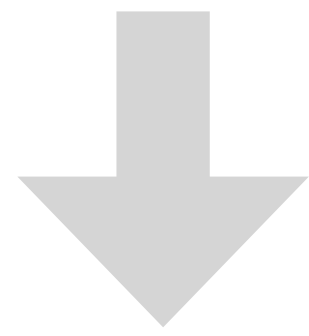
The following was identified, and is generally unchanged from your previous study.

# Creating Structured Data: Inputs

Provider	Sex	Height	Weight (lbs)	Scan Date	Previous Scan Date	Region	Subregion	Subregion Summary	Subregion Change from Previous Study	Finding	Findings Detailed	Comment	Recommendation
PRENUVO	Male	6'1"	180			Head and Neck	Brain	2 findings 1 require moderate attention	No	We detected lesions which are consistent with confluent chronic small vessel ischemia.	- The lesions are scattered throughout your pons. - The lesions are scattered throughout your supratentorial white matter.	> Discuss with your doctor how to manage your risk factors.	- Your cardiovascular health declines with age and this correlates with an increasing prevalence of small vessel ischemia. - Controlling your blood pressure can help prevent progression. - At a minimum, re-evaluation of the brain with a followup Prenuvo scan will be useful to determine if there is progression of these findings.
PRENUVO	Male	6'1"	180			Head and Neck	Brain	2 findings 1 require moderate attention	No	There is a vascular normal variant configuration.	- There is a fetal type left posterior cerebral artery PI segment of the Circle of Willis.	> This is a normal anatomic variant and no action is required.	- This information is only relevant if you were to need brain surgery in the future.
PRENUVO	Male	6'1"	180			Head and Neck	Brain	2 findings 1 require moderate attention	No	No evidence of proximal intracranial arterial aneurysm. No worrisome intracranial lesion is identified within the brain parenchyma. The generalized brain parenchyma volume is normal for age.			
PRENUVO	Male	6'1"	180			Head and Neck	Sinuses and mastoids	2 findings requires minor attention	Yes. May not apply to all findings.	The nasal septum is deviated to the left.	- Deviated by approximately 5 mm.	> No action is required.	- A deviated nasal septum is a physical finding. It does not necessarily cause any symptoms. - If you have difficulty breathing, discuss this finding with your doctor.
PRENUVO	Male	6'1"	180			Head and Neck	Sinuses and mastoids	2 findings requires minor attention	Yes. May not apply to all findings.	We detected findings consistent with sinusitis.	- There is mucosal thickening present bilaterally in your ethmoid sinuses. Mild mucosal thickening is seen in keeping with changes of mild chronic sinusitis.	> This will generally resolve itself without the need for further followup	- Sinusitis is extremely common and usually season or allergy-related. The majority of sinusitis is of no concern and resolves either spontaneously or after removal of the trigger. - There are many over-the-counter medications that may help alleviate symptoms. Many patients relieve discomfort through nasal sprays, steam or flushing the sinuses with saline. - If you have discomfort, or symptoms do not resolve, discuss this finding with your doctor as you may require antibiotics, anti-fungal medication or steroids to treat the sinusitis.
PRENUVO	Male	6'1"	180			Head and Neck	Sinuses and mastoids	2 findings requires minor attention	Yes. May not apply to all findings.	The remaining paranasal sinuses are clear. The mastoids are clear.			
PRENUVO	Male	6'1"	180			Head and Neck	Nasal pharynx	No adverse finding		None. No worrisome mass is identified.			
PRENUVO	Male	6'1"	180			Head and Neck	Oral pharynx	No adverse finding		None. No worrisome mass is identified.			
PRENUVO	Male	6'1"	180			Head and Neck	Hypopharynx	No adverse finding		None. No worrisome mass is identified.			
PRENUVO	Male	6'1"	180			Head and Neck	Thyroid	Informational finding	No	The thyroid appears heterogeneous in composition.		> This appearance of the thyroid gland is often of no consequence as long as your thyroid is normally functioning.	- The functioning of the thyroid gland is best assessed by blood testing of TSH (thyroid stimulating hormone) and if needed other thyroid gland related hormones. - If these tests show you have normal thyroid levels, this finding is benign. - If further tissue characterization of the thyroid gland is needed, this is best performed by ultrasound.
PRENUVO	Male	6'1"	180			Head and Neck	Thyroid	Informational finding	No	No worrisome lesion is present within the thyroid.			
PRENUVO	Male	6'1"	180			Head and Neck	Cervical lymph node chain	No adverse finding		None. No adenopathy is present.			
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Lungs and mediastinum	No adverse finding		None. No restricted solid mass is identified within the pulmonary parenchyma. There is no mediastinal or hilar adenopathy.			
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Heart and great vessels	1 finding require minor attention	No	There is an increased amount of pericardial fat.	- The fat is primarily surrounding your heart. The maximum thickness of the pericardial fat measured 2.0 cm.	> Let your doctor be aware that you have this pericardial fat.	- Increased pericardial fat is seen in obesity and can be sign of metabolic syndrome. - It can also lead to abnormal features on chest xrays.
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Esophagus	No adverse finding		None. No solid mass is identified within the visualized esophagus.			
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Stomach	No adverse finding		None. No solid mass is identified within the stomach wall. There is no fixed hiatal hernia.			
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Liver	2 findings 1 require moderate attention	No	We detected a lesion which is consistent with a simple cyst.	- The cyst is located in segment 8 of your liver. The lesion measured 0.8 cm in diameter.	> This is a benign finding.	- No follow up is necessary. - Cyst changes (if any) can be reassessed on your next scan.
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Liver	2 findings 1 require moderate attention	No	There is evidence of diffuse mild fat deposition in your liver.		> Discuss this finding with your doctor.	- Drinking alcohol frequently can cause the liver to store fat and lead to this condition of fatty infiltration. Reducing your alcohol intake may be beneficial to reducing this abnormal fat storage. - A blood test to assess liver function should be considered.
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Liver	2 findings 1 require moderate attention	No	There is no evidence of increased iron deposition in the liver. The remainder of the hepatic parenchyma appears clear of hepatic masses.			
PRENUVO	Male	6'1"	180			Chest, Abdomen and Pelvis	Gallbladder and biliary system	No adverse finding		None. No gallbladder calculi is present. No worrisome			

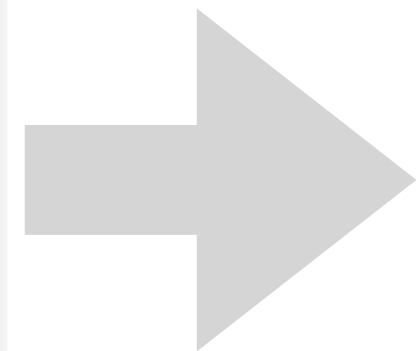
# Creating Structured Data: Methodology

Unstructured Text  
(MRI findings, free text)



LLM Extraction

- Must use defined entity list
- Must cite evidence from source text
- Unrecognized findings flagged for clinician review

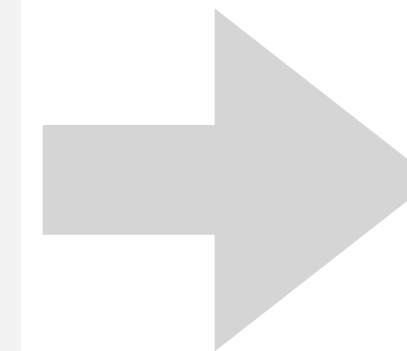


Structured Output

- Binary (present/absent)
- Ordinal (severity, grades)
- Continuous (dimensions)

Naming structure:

*{entity}\_{laterality}\_{location}\_{suffix}*



Validation

- Reject unverified entities
- Requires matching binary for every ordinal/continuous value
- Backfill assessed regions
- Clinician review of unrecognized findings

# Creating Structured Data: Example

A 0.7 x 0.6 cm simple cortical cyst is identified in the upper pole of the left kidney.

patient_id	test_date	test	result	units	Reference
AA_01	2026-xx-xx	kidney_lesion_indeterminate_left_upper_pole_present	1	binary	0
AA_01	2026-xx-xx	kidney_lesion_indeterminate_left_upper_pole_max_dim	7.0	mm	NULL
AA_01	2026-xx-xx	kidney_lesion_indeterminate_left_upper_pole_dim2	6.0	mm	NULL

# Creating Structured Data: Output

provider	patient_id	sex	test_date	category	test	result	units
PRENUVO	1	Male	2023-08-31	Ankles	degenerative_changes_ankle_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Ankles	ganglion_cyst_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Bony skeleton and soft tissue	gynecomastia_bilateral_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Bowel	diverticulosis_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Bowel	hernia_projection_leftinguinal_max_dim	29.0	mm
PRENUVO	1	Male	2023-08-31	Bowel	inguinal_hernia_left_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Bowel	umbilical_hernia_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Brain	brain_tissue_loss_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Brain	pineal_cyst_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Brain	small_vessel_ischemia_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Cervical lymph node chain	adenopathy_cervical_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Gallbladder and biliary system	gallstones_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Heart and great vessels	pericardial_fat_thickness_max_dim	20.0	mm
PRENUVO	1	Male	2023-08-31	Kidneys	hydronephrosis_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Kidneys	kidney_cyst_left_interpolar_max_dim	11.0	mm
PRENUVO	1	Male	2023-08-31	Kidneys	kidney_cyst_right_lower_pole_max_dim	27.0	mm
PRENUVO	1	Male	2023-08-31	Kidneys	kidney_lesion_indeterminate_right_upper_pole_max_dim	10.0	mm
PRENUVO	1	Male	2023-08-31	Kidneys	kidney_cyst_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Knees	baker_cyst_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Knees	degenerative_changes_knee_left_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Knees	degenerative_changes_knee_left_severity	1.0	severity_scale
PRENUVO	1	Male	2023-08-31	Knees	degenerative_changes_knee_right_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Knees	degenerative_changes_knee_right_severity	2.0	severity_scale
PRENUVO	1	Male	2023-08-31	Knees	joint_effusion_right_knee_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Liver	fatty_liver_disease_present	1.0	binary
PRENUVO	1	Male	2023-08-31	Liver	iron_deposition_liver_present	0.0	binary
PRENUVO	1	Male	2023-08-31	Liver	liver_cyst_seg8_max_dim	8.0	mm

Same approach can be applied to any form of data.

Requires domain expertise to define the rules that make each data type computable.

Once data is structured, you can ask any question.

Cohort analytics, patient-level insights, cross-modal patterns, natural language exploration.

- Dashboard
- Patients >
- Test Tracking >
- Import Results
- Explore
- Template Management >
- Users & access

## Explore.

Ask anything — about your patient, about your cohort, across modalities.

Ask anything about your data...



### Suggested

What are the top correlations across blood work and imaging?

Show me Vitamin D trends across the cohort

Compare DEXA body composition between males and females

### Cohort Overview

#### Data Context

Patient sources, modalities and coverage.

#### Prevalence

Frequency of flagged findings across the cohort.

### Cohort Analytics

2,206 pairs

#### Correlations

Biomarkers that move together.

50 groups

#### Associations

Co-occurrence of abnormal clinical values.

#### Clusters

Functional groups of related biomarkers.

- Dashboard
- Patients >
- Test Tracking >
- Import Results
- Explore

Template Management >

Users & access

### Data Context

Overview of your patient cohort, data sources, and modality coverage

**8**

Patients

**5**

Data Sources

**62**

Clinical Events

**5,536**

Data Points

**2022-01-27 –**

**2025-09-16**

Date Range

### Sex Distribution

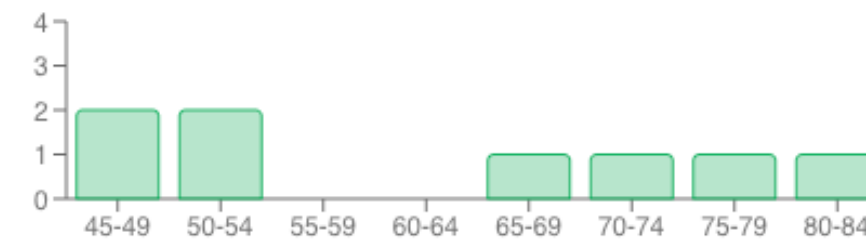
Cohort sex ratio: 63% male, 38% female.



	Male	Female
Count	5	3
Percent	63%	38%

### Age Distribution

Ages in 5-year bins. Median 65 years; range 48–80.



### Modality Coverage

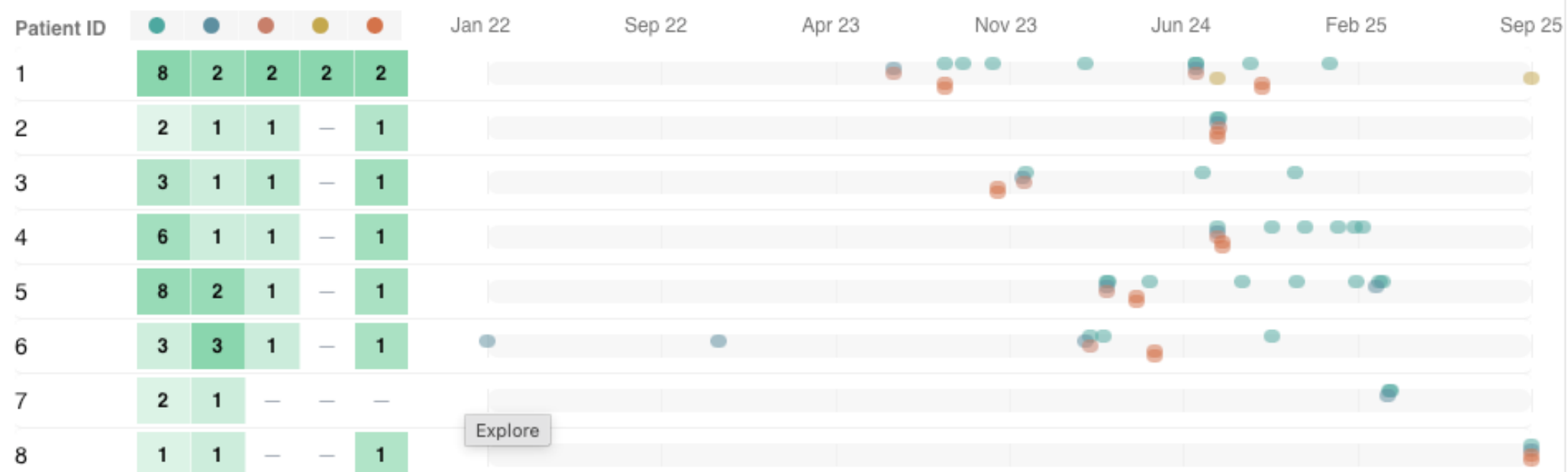
Per-source patient coverage and data volume. Bars show completeness. LIFE and DEXA: 100%; MYCO lowest at 13%.

Source	Patients	Coverage	Tests	Rows	Per Patient	Latest
LIFE	8 / 8	<div style="width: 100%;"></div> 100%	33	1,035	60–222	2025-09-15
DEXA	8 / 8	<div style="width: 100%;"></div> 100%	12	1,878	167–375	2025-09-16
CHL	6 / 8	<div style="width: 75%;"></div> 75%	7	289	39–84	2024-08-14
MYCO	1 / 8	<div style="width: 13%;"></div> 13%	2	973	973–973	2025-09-15
PRENUVO	7 / 8	<div style="width: 88%;"></div> 88%	8	1,361	166–251	2025-09-16

### Patient Coverage & Event Timeline

Each row represents a patient. Heatmap shading reflects relative record density. Timeline shows source events over time. Jan 2022–Sep 2025. 1 of 8 patient has all sources.

LIFE DEXA CHL MYCO PRENUVO



# Data Context and Prevalence

- Dashboard
- Patients >
- Test Tracking >
- Import Results
- Explore

Template Management >

Users & access

## Prevalence

Prevalence of abnormal clinical findings across your cohort

### Computation Scope

Each numeric variable is classified as abnormal using its lab reference range, a clinical guideline threshold, or a positive imaging finding. Prevalence is the proportion of patients flagged per finding, computed from each patient's most recent result.

- 144 abnormal clinical findings assessed across 8 patients from lab results and imaging.
- 55 are abnormal in more than 50% of the cohort.
- 64 show >40-point prevalence difference between sexes.
- 35 have <50% cohort coverage — prevalence may reflect referral bias.

### Most Prevalent

All Male Female

Top 10 most prevalent findings with ≥50% cohort coverage. Use the toggle to view by sex.



### Findings by Modality

All clinical findings grouped by data source. Expand any modality to view its findings by category.

► Blood Labs — 33 findings LIFE

▼ Advanced Lipids & Cardiovascular — 23 findings CHL



# Data Context and Prevalence

- Dashboard
- Patients >
- Test Tracking >
- Import Results
- Explore

Template Management >

Users & access

## Correlations

Pairwise relationships between continuous biomarkers across your cohort

### Computation Scope

All pairwise Spearman correlations computed across every variable and data source, using each patient's most recent result per test as a cross-sectional snapshot. Filtered by effect size ( $|r| \geq 0.30$ ), then p-values corrected for multiple comparisons using Benjamini-Hochberg FDR ( $q \leq 0.10$ ). Ranked by composite score weighting effect strength, patient coverage, cross-modal signal, and significance.

Unique Variables <b>776</b>	Eligible for Correlation <b>442</b>	Pairs Computed <b>68,514</b>	Cross-Modal Pairs <b>46,468</b>	Removed: Weak Effect <b>28,575</b>	Effect Size Passing <b>39,939</b>
Removed: FDR Corrected <b>37,733</b>	Passed All Filters <b>2,206</b>	Cross-Modal Findings <b>290</b>	FDR Method <b>Benjamini-Hochberg</b>		
Sources Analyzed <b>CHL · DEXA · LIFE · PRENUVO_structured</b>					

### Strongest Effects

2,206 significant correlations identified ( $q \leq 0.10$ ). Showing the top 8 correlations with the largest effect sizes across all modalities. Click any [Explore](#) row to view the full detail and scatter plot.

#### 1 Whole Body – Head Lean Mass and Urate show positive correlation across 8 patients

Across 8 patients with paired data, Whole Body – Head Lean Mass and Urate show a positive correlation ( $\rho = +0.98$ ,  $p = 0.000$ ). This spans DEXA + LIFE data sources — a cross-modal finding.

$\rho = +0.98$  [DEXA](#) [LIFE](#)

#### 2 Whole Body – Head Total Mass and Urate show positive correlation across 8 patients

Across 8 patients with paired data, Whole Body – Head Total Mass and Urate show a positive correlation ( $\rho = +0.98$ ,  $p = 0.000$ ). This spans DEXA + LIFE data sources — a cross-modal finding.

$\rho = +0.98$  [DEXA](#) [LIFE](#)

#### 3 Whole Body – Head Bone Mineral Density and Gamma GT show inverse correlation across 8 patients

Across 8 patients with paired data, Whole Body – Head Bone Mineral Density and Gamma GT show a inverse correlation ( $\rho = -0.97$ ,  $p = 0.000$ ). This spans DEXA + LIFE data sources — a cross-modal finding.

$\rho = -0.97$  [DEXA](#) [LIFE](#)

#### 4 Whole Body – R Arm Fat % and Testosterone show inverse correlation across 8 patients

Across 8 patients with paired data, Whole Body – R Arm Fat % and Testosterone show a inverse correlation ( $\rho = -0.96$ ,  $p = 0.000$ ). This spans DEXA + LIFE data sources — a cross-modal finding.

$\rho = -0.96$  [DEXA](#) [LIFE](#)

#### 5 Whole Body – Head Fat Mass and Total Bilirubin show positive correlation across 8 patients

Across 8 patients with paired data, Whole Body – Head Fat Mass and Total Bilirubin show a positive correlation ( $\rho = +0.96$ ,  $p = 0.000$ ). This spans DEXA + LIFE data sources — a cross-modal finding.

$\rho = +0.96$  [DEXA](#) [LIFE](#)

#### 6 Whole Body – Head Fat Mass and Urate show positive correlation across 8 patients

Across 8 patients with paired data, Whole Body – Head Fat Mass and Urate show a positive correlation ( $\rho = +0.95$ ,  $p = 0.000$ ). This spans DEXA + LIFE data sources — a cross-modal finding.

$\rho = +0.95$  [DEXA](#) [LIFE](#)

#### 7 Whole Body – Head Lean BMC and Urate show positive correlation across 8 patients

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## Correlations

Pairwise relationships between continuous biomarkers across your cohort

### Computation Scope

All pairwise Spearman correlations computed across every variable and data source, using each patient's most recent result per test as a cross-sectional snapshot. Filtered by effect size ( $|r| \geq 0.30$ ), then p-values corrected for multiple comparisons using Benjamini-Hochberg FDR ( $q \leq 0.10$ ). Ranked by composite score weighting effect strength, patient coverage, cross-modal signal, and significance.

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### Strongest E

2,206 significant and scatter plot

#### 1 Whole Body – Head Lean Mass and Urate show positive correlation across 8 patients

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$\rho = -0.96$  DEXA LIFE

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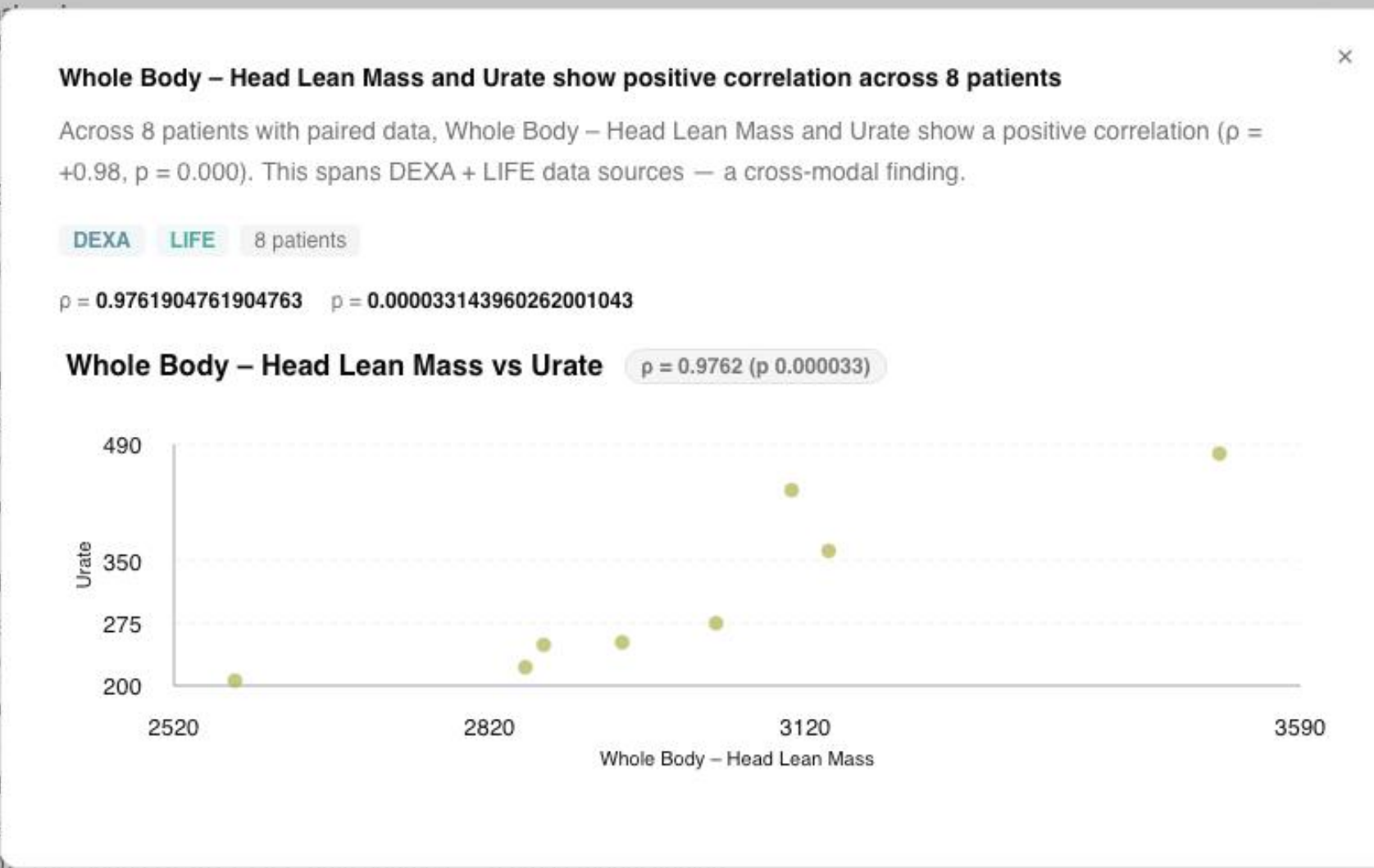
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$\rho = +0.95$  DEXA LIFE

#### 7 Whole Body – Head Lean Bmc and Urate show positive correlation across 8 patients



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Explore

### Signal Density by Modality Pair

How significant correlations are distributed across modality pairs. High counts indicate dense signal overlap between two data sources.

Source 1	Source 2	Correlations	Avg Ipl	Type
DEXA	—	1,173	0.929	within
PRENUVO_structured	—	705	1.000	within
CHL	DEXA	173	0.956	cross-modal
DEXA	LIFE	95	0.901	cross-modal
LIFE	—	26	0.915	within
CHL	LIFE	21	0.957	cross-modal
CHL	—	12	0.968	within
DEXA	PRENUVO_structured	1	0.907	cross-modal

### Most Connected Variables

Variables appearing in the most significant correlations across modalities. Click a variable to view its correlation pairs below.

Variable	Source	Correlations	Modalities
Left Hip – Total Area	DEXA	47	3
Whole Body – Subtotal Lean Bmc	DEXA	47	3
Whole Body – Total Lean Bmc	DEXA	47	3
Whole Body – Trunk Lean Mass	DEXA	47	3
Metabolic Resting Metabolic Rate	DEXA	47	3
Whole Body – Trunk Lean Bmc	DEXA	43	3
Lumbar Spine – L3 Area	DEXA	42	3
Left Hip – Neck Area	DEXA	40	3
Whole Body – L Leg Area	DEXA	38	3
Whole Body – Subtotal Lean Mass	DEXA	34	3
Whole Body – Total Lean Mass	DEXA	34	3
Whole Body – L Arm Lean Bmc	DEXA	34	3
Whole Body – R Arm Lean Bmc	DEXA	34	3
Whole Body – L Arm Lean Mass	DEXA	34	3
Whole Body – R Arm Lean Mass	DEXA	34	3
Whole Body – L Leg Lean Mass	DEXA	33	3
Whole Body – L Leg Lean Bmc	DEXA	33	3
Whole Body – R Leg Lean Bmc	DEXA	33	3
Whole Body – R Leg Lean Mass	DEXA	33	3
Whole Body – L Leg Bone Mineral Content	DEXA	32	3

### Cross-Modal Bridges

The single strongest association linking each pair of data sources. Click any bridge to view the detail and scatter plot.

DEXA × LIFE	$\rho = +0.98$ n=8
Whole Body – Head Lean Mass ↔ Urate	
CHL × DEXA	$\rho = -1.00$ n=6
Lp-PLA2 Activity ↔ Whole Body – L Spine Area	
CHL × LIFE	$\rho = -1.00$ n=6
TG/HDL-C ↔ HDL Cholesterol	
DEXA × PRENUVO_structured	$\rho = +0.91$ n=7
Whole Body – Head Fat % ↔ Small Vessel Ischemia	

# Correlations



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CHL	—	12	0.968	within
DEXA	PRENUVO_structured	1	0.907	cross-modal

### Most Connected

Variables appearing together to view its correlations

Variable	Correlations	Avg Ipl
Left Hip —		
Whole Body —		
Whole Body —		
Whole Body —		
Metabolic		
Whole Body —		
Lumbar Spine		
Left Hip —		
Whole Body —		
Whole Body — Subtotal Lean mass	DEXA	34
Whole Body — Total Lean Mass	DEXA	34
Whole Body — L Arm Lean Bmc	DEXA	34
Whole Body — R Arm Lean Bmc	DEXA	34
Whole Body — L Arm Lean Mass	DEXA	34
Whole Body — R Arm Lean Mass	DEXA	34
Whole Body — L Leg Lean Mass	DEXA	33
Whole Body — L Leg Lean Bmc	DEXA	33
Whole Body — R Leg Lean Bmc	DEXA	33
Whole Body — R Leg Lean Mass	DEXA	33
Whole Body — L Leg Bone Mineral Content	DEXA	32

**TG/HDL-C and HDL Cholesterol show inverse correlation across 6 patients**

Across 6 patients with paired data, TG/HDL-C and HDL Cholesterol show an inverse correlation ( $\rho = -1.00$ ,  $p = 0.000$ ). This spans CHL + LIFE data sources — a cross-modal finding.

CHL LIFE 6 patients

$\rho = -1$   $p = 0$

**TG/HDL-C vs HDL Cholesterol**  $\rho = -1.0$

# Correlations

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## Associations

Explore which clinical conditions tend to co-occur in your patients

### Computation Scope

Each continuous variable is dichotomized using its lab reference range, a canonical clinical threshold, or (where no reference exists) a cohort-relative median split, based on each patient's most recent result per test. All native binary variables (imaging findings) are included directly. Fisher's exact test is applied to every pair, with Benjamini-Hochberg FDR correction.

Variables Dichotomized <b>247</b>	From Reference Ranges <b>76</b>	From Clinical Guidelines <b>8</b>	Native Binary (Imaging) <b>59</b>	Cohort-Relative Splits <b>145</b>
Pairs Tested <b>29,874</b>	Significant ( $q \leq 0.10$ ) <b>0</b>	FDR Method <b>Benjamini-Hochberg</b>		
Patients <b>8</b>				

### Strongest Clinical Associations

0 significant clinical associations identified ( $q \leq 0.10$ ). Showing the top 10 associations between variables classified using lab reference ranges, clinical guidelines, or imaging findings. These thresholds are independent of the cohort.

- 1 High Cholesterol x Inguinal Hernia**  
 0 of 4 patients with High Cholesterol also have Inguinal Hernia — OR = —,  $p = 0.0286$ ,  $q = 0.8561$   
 $n=7 \cdot [0, 4, 3, 0]$  LIFE PRENUVO\_structured
- 2 Elevated Visceral Fat (>100 cm<sup>2</sup>) x Kidney Cyst**  
 3 of 3 patients with Elevated Visceral Fat (>100 cm<sup>2</sup>) also have Kidney Cyst — OR = ∞,  $p = 0.0286$ ,  $q = 0.8561$   
 $n=7 \cdot [3, 0, 0, 4]$  DEXA PRENUVO\_structured
- 3 High LDL Cholesterol x Degenerative Changes Knee**  
 0 of 5 patients with High LDL Cholesterol also have Degenerative Changes Knee — OR = —,  $p = 0.0476$ ,  $q = 1.0000$   
 $n=7 \cdot [0, 5, 2, 0]$  LIFE PRENUVO\_structured
- 4 High LDL Cholesterol x Hernia Projection**  
 0 of 5 patients with High LDL Cholesterol also have Hernia Projection — OR = —,  $p = 0.0476$ ,  $q = 1.0000$   
 $n=7 \cdot [0, 5, 2, 0]$  LIFE PRENUVO\_structured
- 5 High Cholesterol x Elevated Visceral Fat (>100 cm<sup>2</sup>)**  
 1 of 4 patients with High Cholesterol also have Elevated Visceral Fat (>100 cm<sup>2</sup>) — OR = 0.11,  $p = 0.4857$ ,  $q = 1.0000$   
 $n=8 \cdot [1, 3, 3, 1]$  DEXA LIFE
- 6 High Cholesterol x Low BMD Spine (T<sub>s</sub>−1.0)**  
 3 of 4 patients with High Cholesterol also have Low BMD Spine (T<sub>s</sub>−1.0) — OR = 9.00,  $p = 0.4857$ ,  $q = 1.0000$   
 $n=8 \cdot [3, 1, 1, 3]$  DEXA LIFE
- 7 High Sex Hormone Binding Globulin x Elevated Visceral Fat (>100 cm<sup>2</sup>)**  
 1 of 4 patients with High Sex Hormone Binding Globulin also have Elevated Visceral Fat (>100 cm<sup>2</sup>) — OR = 0.11,  $p = 0.4857$ ,  $q = 1.0000$   
 $n=8 \cdot [1, 3, 3, 1]$  DEXA LIFE
- 8 High DHEA Sulphate x Elevated Visceral Fat (>100 cm<sup>2</sup>)**  
 1 of 4 patients with High DHEA Sulphate also have Elevated Visceral Fat (>100 cm<sup>2</sup>) — OR = 0.11,  $p = 0.4857$ ,  $q = 1.0000$   
 $n=8 \cdot [1, 3, 3, 1]$  DEXA LIFE

# Associations



- Dashboard
- Patients >
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- Import Results
- Explore
- Template Management >
- Users & access

## Associations

Explore which clinical conditions tend to co-occur in your patients

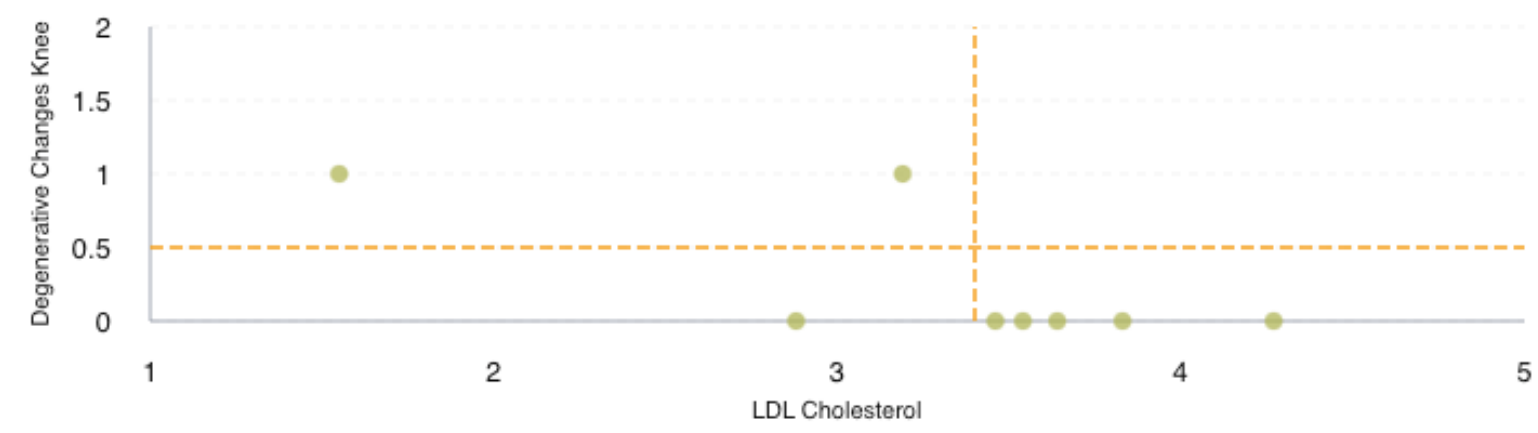
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Patients <b>8</b>				

### Strongest C

0 significant clinical associations  
imaging finding

- 1 High LDL Cholesterol x Degenerative Changes Knee  
0 of 5 patients with High LDL Cholesterol also have Degenerative Changes Knee. Amber dashed lines show the classification thresholds that define the quadrants.  
LIFE PRENUVO\_structured 7 patients  
OR = —  $p = 0.0476$   $q$  (FDR) = **1.0000** [0, 5, 2, 0]
- 2 LDL Cholesterol vs Degenerative Changes Knee  $p = -0.6299$  (p 0.094133)  


This association does not reach statistical significance after FDR correction ( $q > 0.10$ ).
- 4 High LDL Cholesterol x Hernia Projection — OR = —,  $p = 0.0476$ ,  $q = 1.0000$   
n=7 · [0, 5, 2, 0] LIFE PRENUVO\_structured
- 5 High Cholesterol x Elevated Visceral Fat (>100 cm<sup>2</sup>)  
1 of 4 patients with High Cholesterol also have Elevated Visceral Fat (>100 cm<sup>2</sup>) — OR = 0.11,  $p = 0.4857$ ,  $q = 1.0000$   
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n=8 · [3, 1, 1, 3] DEXA LIFE
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# Associations

## Clusters

Communities of biomarkers that co-vary as functional groups

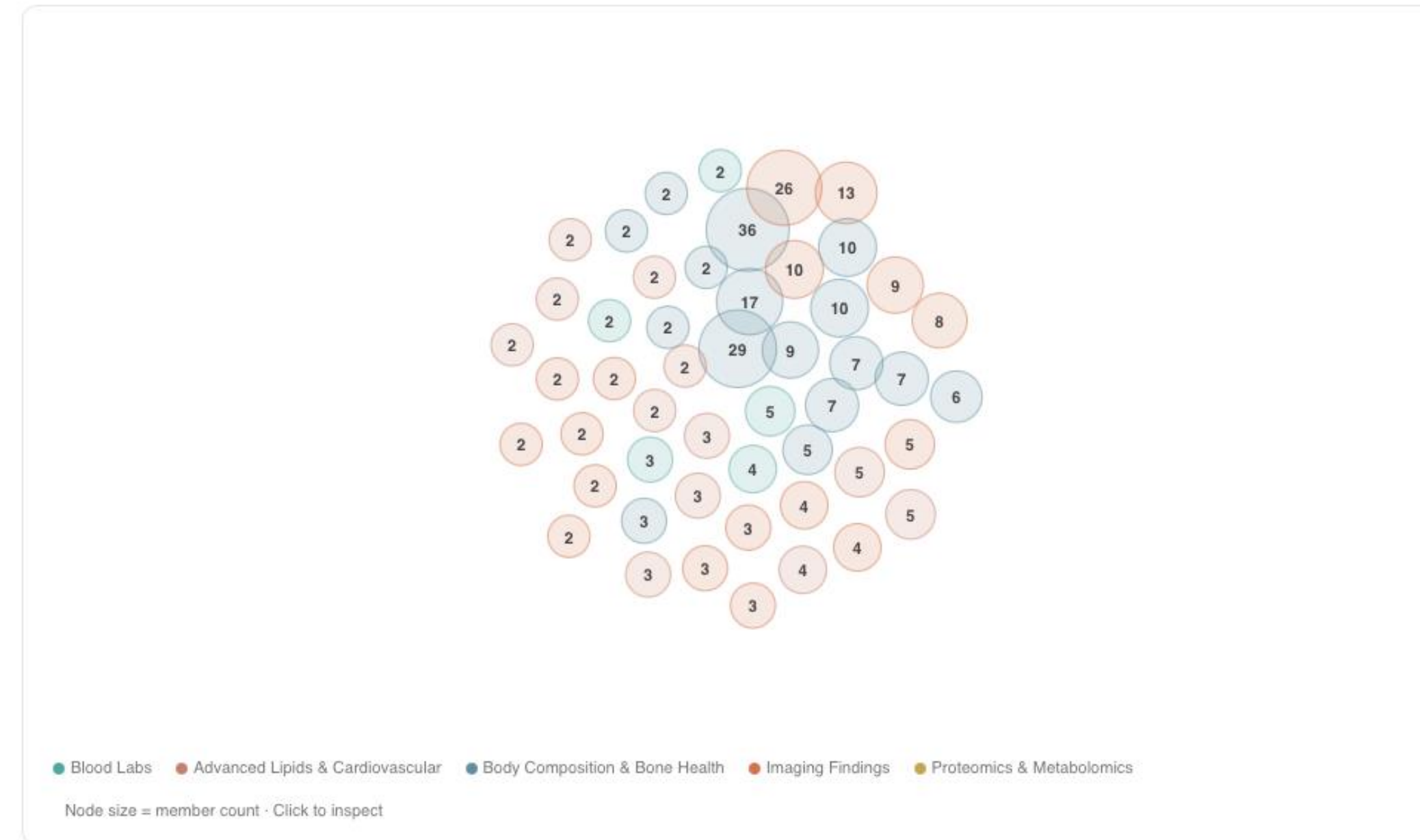
### Computation Scope

Only variables that appear in at least one significant correlation ( $|r| \geq 0.30$ , FDR-corrected) are included. Hierarchical agglomerative clustering groups the remaining variables into communities using correlation distance ( $1 - |r|$ ) with average linkage. The cophenetic correlation measures how well the dendrogram preserves pairwise distances.

Variables Clustered <b>312</b>	Clusters Found <b>50</b>	Unclassified Variables <b>7</b>	Distance Threshold <b>0.70</b>	Linkage Method <b>average</b>
Cophenetic Correlation <b>0.827</b>	Cross-Cluster Bridges <b>20</b>			

### Cluster Network

Each node is a cluster, sized by member count and colored by its dominant data source. Edges represent the strongest correlation bridging each pair of clusters. Hover a node to highlight its connections. Click an edge to view the scatter plot.



### Cluster Summary

50 clusters identified from 312 variables. Click a row to expand and see the co-variation heatmap.

#	Representative	Size	Avg  r	Modalities
1	▶ Left Hip – Total Area	36	0.601	CHL DEXA LIFE
2	▶ Left Hip – Neck Bone Mineral Content	29	0.615	DEXA LIFE

# Clusters

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- Patients >
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## Clusters

Communities of biomarkers that co-vary as functional groups

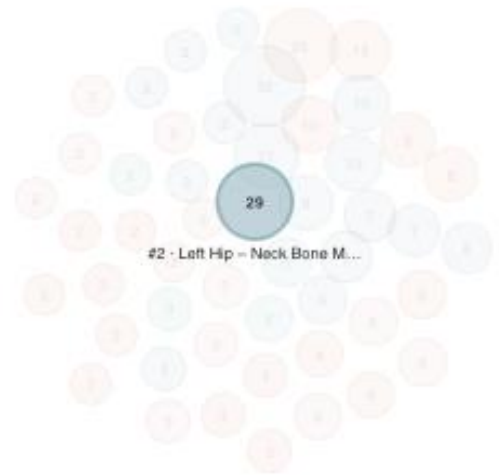
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**Cluster #2**  
29 members · avg  $|r| = 0.615$

- DEXA Left Hip – Neck Bone Mineral Content  
↔ CHL F2-Isoprostane/Creatinine  $|r|=1.00$  - #
- DEXA Left Hip – Neck Bone Mineral Density
- DEXA Left Hip – Total Bone Mineral Content
- DEXA Left Hip – Total Bone Mineral Density
- DEXA Lumbar Spine – Total Area  
↔ DEXA Whole Body – T Spine Bone Mineral Density  $|r|=0.98$  - #
- DEXA Right Hip – Neck Bone Mineral Content
- DEXA Right Hip – Neck Bone Mineral Density  
↔ DEXA Left Hip – Neck Bmd Z Score  $|r|=0.97$  - #
- DEXA Right Hip – Total Bone Mineral Content
- DEXA Right Hip – Total Bone Mineral Density
- DEXA Whole Body – L Leg Area  
↔ CHL AALP Apo C1  $|r|=1.00$  - #  
↔ DEXA Left Hip – Neck Area  $|r|=0.98$  - #
- DEXA Whole Body – L Leg Bone Mineral Content
- DEXA Whole Body – L Leg Bone Mineral Density

● Blood Labs  
 ● Advanced Lipids & Cardiovascular  
 ● Body Composition & Bone Health  
● Imaging Findings  
 ● Proteomics & Metabolomics  
 Node size = member count · Click to inspect

### Cluster Summary

50 clusters identified from 312 variables. Click a row to expand and see the co-variation heatmap.

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- Dashboard
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- Template Management >

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- Users & access

### Cluster Summary

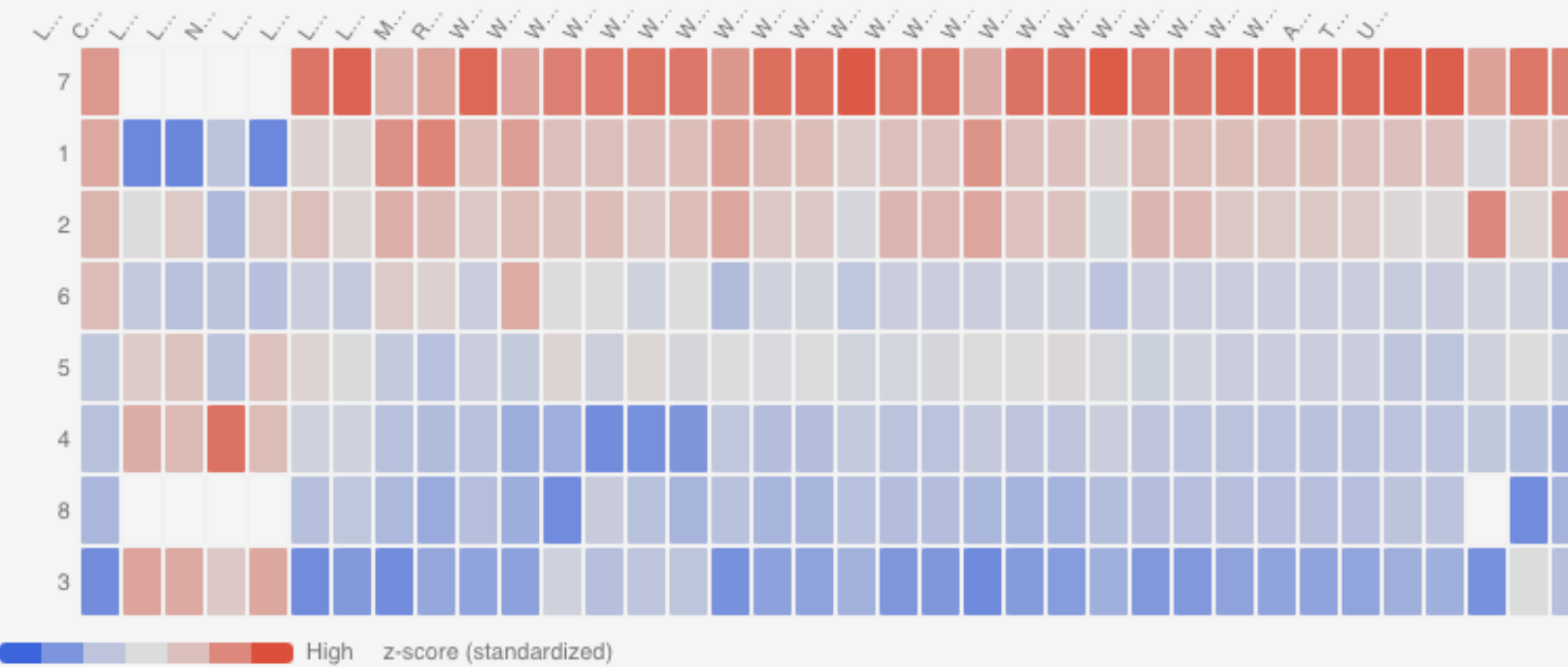
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#	Representative	Size	Avg Ipl	Modalities
1	Left Hip – Total Area	36	0.601	CHL, DEXA, LIFE

CHL	Cholesterol Total	CHL	LDL Cholesterol	CHL	LDL Size	CHL	Non-HDL Cholesterol	DEXA	Lean Indices Appen. Lean/Height <sup>2</sup> (Kg/M <sup>2</sup> )
DEXA	Lean Indices Lean/Height <sup>2</sup> (Kg/M <sup>2</sup> )	DEXA	Left Hip – Neck Area	DEXA	Left Hip – Total Area	DEXA	Lumbar Spine – L3 Area		
DEXA	Metabolic Resting Metabolic Rate	DEXA	Right Hip – Total Area	DEXA	Whole Body – Head Fat Mass	DEXA	Whole Body – Head Lean Bmc		
DEXA	Whole Body – Head Lean Mass	DEXA	Whole Body – Head Total Mass	DEXA	Whole Body – L Arm Area	DEXA	Whole Body – L Arm Lean Bmc		
DEXA	Whole Body – L Arm Lean Mass	DEXA	Whole Body – L Arm Total Mass	DEXA	Whole Body – L Leg Lean Bmc				
DEXA	Whole Body – L Leg Lean Mass	DEXA	Whole Body – R Arm Area	DEXA	Whole Body – R Arm Lean Bmc				
DEXA	Whole Body – R Arm Lean Mass	DEXA	Whole Body – R Arm Total Mass	DEXA	Whole Body – R Leg Lean Bmc				
DEXA	Whole Body – R Leg Lean Mass	DEXA	Whole Body – Subtotal Lean Bmc	DEXA	Whole Body – Subtotal Lean Mass				
DEXA	Whole Body – Total Lean Bmc	DEXA	Whole Body – Total Lean Mass	DEXA	Whole Body – Trunk Lean Bmc				
DEXA	Whole Body – Trunk Lean Mass	LIFE	Alanine Aminotransferase	LIFE	Total Bilirubin	LIFE	Urate		

Rows = patients, columns = cluster variables. Red = high z-score, blue = low. Consistent horizontal bands confirm co-variation.



2	Left Hip – Neck Bone Mineral Content	29	0.615	DEXA, LIFE
3	Bursitis Right Shoulder	26	1.000	PRENUVO_structured
4	Lumbar Spine – L3 Bone Mineral Density	17	0.958	DEXA
5	Brain Tissue Loss	13	1.000	PRENUVO_structured
6	Degenerative Changes Ac Joint Left	10	1.000	PRENUVO_structured
7	Whole Body – L Arm Fat %	10	0.754	CHL, DEXA
8	Lp-PLA2 Activity	10	0.711	CHL, DEXA
9	Degenerative Changes Knee Bilateral	9	1.000	PRENUVO_structured
10	Adipose Indices % Fat Trunk/% Fat Legs	9	0.636	CHL, DEXA, LIFE
11	Degenerative Changes Ac Joint Bilateral	8	1.000	PRENUVO_structured
12	Whole Body – Subtotal Total Mass	7	0.764	DEXA
13	Whole Body – Subtotal Fat Mass	7	0.669	CHL, DEXA
14	Whole Body – L Ribs Bone Mineral Density	7	0.523	DEXA
15	Adipose Indices Trunk/Limb Fat Mass Ratio Z Score	6	0.764	CHL, DEXA
16	Disc Desiccation C5C6	5	1.000	PRENUVO_structured

# Clusters

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Compare DEXA body composition between males and females

### Cohort Overview

#### Data Context

Patient sources, modalities and coverage.

#### Prevalence

Frequency of flagged findings across the cohort.

### Cohort Analytics

2,206 pairs

#### Correlations

Biomarkers that move together.

#### Associations

Co-occurrence of abnormal clinical values.

50 groups

#### Clusters

Functional groups of related biomarkers.

#### Longitudinal Trends

Track biomarker changes over time.

#### Patient Phenotyping

Group patients by shared biomarker profiles.

#### Dimensionality Reduction

High-dimensional data projected into 2D.

### Patient Analytics

8 patients

#### Patients

Individual patient profiles, trends, and flagged changes.

## Patient 1

Male · DOB 1946-05-12  
Results up to **2025-09-15**

✓ Import Up to Date

LIFE DEXA CHL MYCO PRENUVO\_structured

### New Results

Most significant changes from the latest import

**NEW** CHL, DEXA, LIFE, MYCO, PRENUVO\_structured · 2025-09-15

Mark as Reviewed ^

#### SUMMARY

- Overall trajectory is mixed: cardiometabolic risk markers improved substantially, but renal imaging/function and musculoskeletal disease moved the wrong way. - I'd prioritize follow-up of the enlarging indeterminate renal lesion, especially given concordant eGFR/creatinine drift. - The weight/fat loss looks metabolically beneficial, but the lean-mass drop is the main counterweight to watch in an 80-year-old male.

> **Right renal lesion enlarged alongside lower filtration** PRENUVO\_structured LIFE CHL

> **Atherometabolic markers moved strongly in the right direction** CHL

> **Glucose-insulin physiology improved, but lean mass fell** CHL LIFE DEXA

> **Musculoskeletal imaging worsened, while prostate imaging improved** PRENUVO\_structured LIFE

[See all 440 new results →](#)

[Re-run New Results](#)

AI-generated analysis — does not replace clinical review of all results.

### Attention

Items requiring clinical review

#	ISSUE	ACTION	KEY VALUES	SOURCES
> 1	Marked NT-proBNP elevation with renal impairment	NEEDS REVIEW	NT-proBNP 722 ng/L, eGFR 56 mL/min/1.73m <sup>2</sup> , Creatinine 108 μmol/L	<span>LIFE</span>
> 2	Stage 3a kidney function needs confirmation	RETEST	eGFR 56 mL/min/1.73m <sup>2</sup> , eGFR at 0th cohort percentile, Creatinine 108 μmol/L, Urine ACR 1.2	<span>LIFE</span>
> 3	Elevated PSA with rising testosterone	NEEDS REVIEW	PSA 7.6 μg/L, Testosterone increased by +3.9 over 3 measurements, Latest testosterone 13.8 nmol/L	<span>LIFE</span>
> 4	Autoimmune thyroiditis with high-end TSH	MONITOR	Thyroperoxidase antibody 348 IU/mL, TSH 3.88 mIU/L, MCH 32.9 pg	<span>LIFE</span>
> 5	Mercury exposure above range with reduced renal reserve	RETEST	Blood mercury 39 nmol/L, eGFR 56 mL/min/1.73m <sup>2</sup> , Creatinine 108 μmol/L	<span>LIFE</span>
> 6	Very low atherogenic lipids may reflect overtreatment	MONITOR	ApoB 0.53 g/L, LDL cholesterol 1.55 mmol/L, Total cholesterol 3.55 mmol/L, Chol/HDL ratio 2.15	<span>LIFE</span>

[Show less ↑](#)

# Patient

### Patient 1

Male · DOB 1946-05-12  
Results up to 2025-09-15

✓ Import Up to Date

LIFE DEXA CHL MYCO PRENUVO\_structured

#### New Results

Most significant changes from the latest import

NEW CHL, DEXA, LIFE, MYCO, PRENUVO\_structured · 2025-09-15

Mark as Reviewed

##### SUMMARY

- Overall trajectory is mixed: cardiometabolic risk markers improved substantially, but renal imaging/function and musculoskeletal disease moved the wrong way. - I'd prioritize follow-up of the enlarging indeterminate renal lesion, especially given concordant eGFR/creatinine drift. - The weight/fat loss looks metabolically beneficial, but the lean-mass drop is the main counterweight to watch in an 80-year-old male.

##### Right renal lesion enlarged alongside lower filtration

PRENUVO\_structured LIFE CHL

- Indeterminate right upper-pole renal lesion is now 15 mm, up from 10 mm (+50% from prior/baseline).
- Creatinine is 108  $\mu\text{mol/L}$ , up from personal baseline 98.5 (+9.6%, z +1.32) and near the upper end of range.
- eGFR is 56, down from baseline 63 (-11.1%), now below the usual  $\geq 60$  threshold if persistent.
- Cystatin C-based eGFR also came in at 57  $\text{mL/min/1.73 m}^2$ , concordant with the LIFE eGFR.
- For an 80-year-old male, this is mild CKD-range if sustained; the structural renal change makes it worth not dismissing as lab noise.

Explore

##### Atherometabolic markers moved strongly in the right direction

CHL

##### Glucose-insulin physiology improved, but lean mass fell

CHL LIFE DEXA

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PRENUVO\_structured LIFE

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# Patient



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Template Management >

Users & access

### LIFE

#### INCREASED (7)

TEST	CURRENT (2025-01-02)	PREVIOUS (2024-07-17)	Δ%	REFERENCE	TREND
<b>C Reactive Protein</b>	<b>0.7 mg/L</b>	0.5	↑40.0%	<5.0	
Platelet Count	221 10 <sup>9</sup> /L	206	↑7.3%	150 - 400	
Glucose Fasting	4.8 mmol/L	4.5	↑6.7%	3.3 - 5.5	
Creatinine	108 umol/L	102	↑5.9%	45 - 110	
<b>Apolipoprotein B-100</b>	<b>0.53 g/L</b>	0.51	↑3.9%	0.59 - 1.25	
MCHC	337 g/L	329	↑2.4%	300 - 370	
<b>Prostate Specific Ag</b>	<b>7.6 ug/L</b>	7.5	↑1.3%	<6.0	

#### DECREASED (12)

TEST	CURRENT (2025-01-02)	PREVIOUS (2024-07-17)	Δ%	REFERENCE	TREND
<b>TSH</b>	<b>3.88 mU/L</b>	5.4	↓28.1%	0.32 - 5.04	
Neutrophils	2.9 10 <sup>9</sup> /L	3.9	↓25.6%	2.0 - 7.5	
<b>WBC</b>	<b>4.8 10<sup>9</sup>/L</b>	6.1	↓21.3%	4.0 - 10.0	
Lymphocytes	1.3 10 <sup>9</sup> /L	1.5	↓13.3%	1.0 - 4.0	
RDW	12.5 %	13.5	↓7.4%	11.5 - 14.5	
Hematocrit	0.41 L/L	0.44	↓6.8%	0.40 - 0.50	
Estimated GFR	56	60	↓6.7%	≥60	
MCV	98 fl	104	↓5.8%	82 - 98	
Hemoglobin	139 g/L	146	↓4.8%	135 - 170	
<b>Hemoglobin A1c</b>	<b>5 %</b>	5.2	↓3.9%	4.5 - 5.9	
MCH	32.9 pg	34.1	↓3.5%	27.5 - 33.5	
RBC	4.22 10 <sup>12</sup> /L	4.28	↓1.4%	4.20 - 5.40	

#### UNCHANGED (2)

TEST	CURRENT (2025-01-02)	PREVIOUS (2024-07-17)	Δ%	REFERENCE	TREND
Monocytes	0.5 10 <sup>9</sup> /L	0.5	0.0%	0.1 - 0.8	
Eosinophils	0.1 10 <sup>9</sup> /L	0.1	0.0%	0.0 - 0.7	

### MYCO

#### INCREASED (42)

TEST	CURRENT (2025-09-15)	PREVIOUS (2024-08-13)	Δ%	REFERENCE	TREND
<b>Insulin-like growth factor-binding protein 3</b>	<b>107.9 nM</b>	20.3	↑431.5%	83.5-214.2	
<b>Apolipoprotein B-100</b>	<b>851.5 nM</b>	196.1	↑334.2%	494.6-2060.0	
<b>alpha-Amino adipic acid</b>	<b>1.4 μM</b>	0.36	↑288.9%	0.0-2.2	

# Patient

▼ **Right renal lesion enlarged alongside lower filtration**
PRENUVO\_structured LIFE CHL

- Indeterminate right upper-pole renal lesion is now **15 mm**, up from **10 mm (+50%** from prior/baseline).
- Creatinine is **108 μmol/L**, up from personal baseline **98.5 (+9.6%, z +1.32)** and near the upper end of range.
- eGFR is **56**, down from baseline **63 (-11.1%)**, now below the usual **≥60** threshold if persistent.
- Cystatin C-based eGFR also came in at **57 mL/min/1.73 m<sup>2</sup>**, concordant with the LIFE eGFR.
- For an 80-year-old male, this is mild CKD-range if sustained; the structural renal change makes it worth not dismissing as lab noise.

Explore

---

> **Atherometabolic markers moved strongly in the right direction**
CHL

---

> **Glucose-insulin physiology improved, but lean mass fell**
CHL LIFE DEXA

---

> **Musculoskeletal imaging worsened, while prostate imaging improved**
PRENUVO\_structured LIFE

[See all 440 new results →](#)

Re-run New Results

AI-generated analysis — does not replace clinical review of all results.

**Attention**

Items requiring clinical review

#	ISSUE	ACTION	KEY VALUES	SOURCES
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▼ 3	Elevated PSA with rising testosterone	NEEDS REVIEW	PSA 7.6 μg/L, Testosterone increased by +3.9 over 3 measurements, Latest testosterone 13.8 nmol/L	LIFE
<p><b>Elevated PSA with rising testosterone</b></p> <p><b>SUPPORTING EVIDENCE</b></p> <ul style="list-style-type: none"> <li>PSA 7.6 μg/L, above reference &lt;6.0</li> <li>Testosterone increased by +3.9 over 3 measurements</li> <li>Latest testosterone 13.8 nmol/L</li> </ul> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"> <p><b>WHY THIS MATTERS</b></p> <p>PSA elevation above the age-adjusted lab threshold warrants confirmation, and a concurrent testosterone rise can be relevant because androgen exposure can influence prostate volume and PSA kinetics. This pairing is more actionable than an isolated PSA flag.</p> </div> <p><b>SUGGESTED REVIEW</b></p> <p style="background-color: #fff9c4; padding: 5px;">Repeat PSA with free/total PSA under standardized conditions and consider DRE/urology review if persistent or rising.</p> <p style="margin-top: 5px;"> <span style="border: 2px solid red; border-radius: 50%; padding: 2px 10px;">Explore</span> <span style="margin-left: 10px;">Track as Active Issue</span> <span style="margin-left: 10px;">Dismiss</span> </p>				
> 4	Autoimmune thyroiditis with high-end TSH	MONITOR	Thyroperoxidase antibody 348 IU/mL, TSH 3.88 mIU/L, MCH 32.9 pg	LIFE
> 5	Mercury exposure above range with reduced renal reserve	RETEST	Blood mercury 39 nmol/L, eGFR 56 mL/min/1.73m <sup>2</sup> , Creatinine 108 μmol/L	LIFE



Patient

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- Users & access

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Right renal lesion enlarged alongside lower filtration PRENUVO\_structured LIFE CHL

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Explore

---

Atherometabolic markers moved strongly in the right direction CHL

---

Glucose-insulin physiology improved, but lean mass fell CHL LIFE DEXA

---

Musculoskeletal imaging worsened, while prostate imaging improved PRENUVO\_structured LIFE

See all 440 new results →

Re-run New Results

AI-generated analysis — does not replace clinical review of all results.

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∨ 3	Elevated PSA with rising testosterone	NEEDS REVIEW	PSA 7.6 μg/L, Testosterone increased by +3.9 over 3 measurements, Latest testosterone 13.8 nmol/L	LIFE

#### Elevated PSA with rising testosterone

##### SUPPORTING EVIDENCE

- PSA 7.6 μg/L, above reference <6.0
- Testosterone increased by +3.9 over 3 measurements
- Latest testosterone 13.8 nmol/L

##### WHY THIS MATTERS

PSA elevation above the age-adjusted lab threshold warrants confirmation, and a concurrent testosterone rise can be relevant because androgen exposure can influence prostate volume and PSA kinetics. This pairing is more actionable than an isolated PSA flag.

##### SUGGESTED REVIEW

Repeat PSA with free/total PSA under standardized conditions and consider DRE/urology review if persistent or rising.

- Explore
+ Track as Active Issue
× Dismiss

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Patient

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[Explore](#)

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[+ Track as Active Issue](#)
[X Dismiss](#)

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X x<sup>k</sup> □ ↻

**Here is a finding needing attention for patient 1: Title: Elevated PSA with rising testosterone** Details: PSA elevation above the age-adjusted lab threshold warrants confirmation, and a concurrent testosterone rise can be relevant because androgen exposure can influence prostate volume and PSA kinetics. This pairing is more actionable than an isolated PSA flag. PSA 7.6 μg/L, above reference <6.0; Testosterone increased by +3.9 over 3 measurements; Latest testosterone 13.8 nmol/L Please compare pairwise correlations and associations across the cohort for the named variables and show relevant trends.

Q1 Prostate Specific Ag vs Testos... >

**KEY TAKEAWAY**

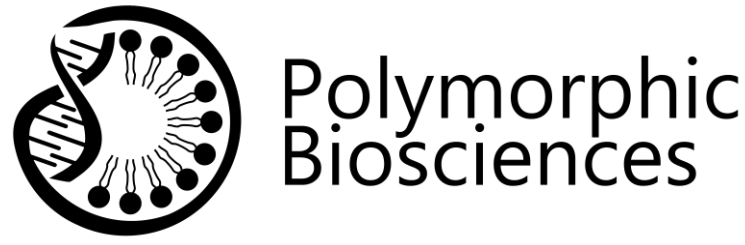
Across 5 male patients, PSA and testosterone show a **moderate inverse correlation**, not a positive one, but the estimate is **unstable and not statistically significant** because paired sample sizes are very small.

The dataset includes **15 PSA results**, **9 total testosterone results**, and **7 each** for calculated free and bioavailable testosterone from LIFE, spanning **2023-08-31 to 2025-03-20**. The key clinical outlier is **Patient 1**, who has persistently **above-threshold PSA** while testosterone rose modestly within the normal range.

[More detail](#)

Ask a follow-up... →

Patient



← Back to Patients

Right renal lesion

- Indeterminate right u...
- Creatinine is 108 μm...
- eGFR is 56, down fr...
- Cystatin C-based eG...
- For an 80-year-old m...
- noise.

Atherometabolic n...

Glucose-insulin pl...

Musculoskeletal ir...

See all 440 new results -

Re-run New Results

AI-generated analysis - doe

Attention

Items requiring clinical review

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1	Marked NT-proBNP e... impairment
2	Stage 3a kidney funct... confirmation
3	Elevated PSA with ris...
4	Autoimmune thyroiditi... TSH
5	Mercury exposure above... reduced renal reserve

SUGGESTED REVIEW

Repeat PSA with free/to

Explore + Trac

Show me the trend in vitamin D across the cohort?

Records Retrieved

12 Records    7 Patients    1 Biomarkers    Aug 2023 – Sep 2025 Date Range

Sources LIFE

Computation

Sen's slope + Mann-Kendall trend test

7 Series analyzed    2 mo Time span    7 of 8 Patient coverage

Viewer

25-Hydroxyvitamin D across 7 patients, ranked by current reference-range status. Open circles show baseline (earliest); filled show current (most recent). Green band marks the reference range. n = 7

Trajectory: ↑ 2 improved    ↓ 1 declined    → 1 stable

Currently: 5 in range    2 below range

25-Hydroxyvitamin D — Patient Trajectories

Context

Reference-range adherence for 4 patients with serial measurements of 25-Hydroxyvitamin D. At baseline 1/4 (25%) were within normal range — currently 4/4 (100%).

Baseline: 25% in range

Current: 100% in range

RETEST

Here is a finding needing attention for patient 1: Title: Elevated PSA with rising testosterone Details: PSA elevation above the age-adjusted lab threshold warrants confirmation, and a concurrent testosterone rise can be relevant because androgen exposure can influence prostate volume and PSA kinetics. This pairing is more actionable than an isolated PSA flag. PSA 7.6 μg/L, above reference <6.0; Testosterone increased by +3.9 over 3 measurements; Latest testosterone 13.8 nmol/L Please compare pairwise correlations and associations across the cohort for the named variables and show relevant trends.

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More detail

Show me the trend in Vitamin D across the cohort?

Q2 25-Hydroxyvitamin D — Patien...

KEY TAKEAWAY

Vitamin D is improving in most patients with serial data, but 3 patients have only single measurements, so cohort-level trend confidence is limited.

Across LIFE data, there are 12 Vitamin D results for 7 patients, spanning 2023-08-31 to 2025-09-15. Only 4 patients have serial measurements; among those, 2 increased, 1 decreased, and 1 rose numerically but was classified as fluctuating/not sustained.

Hide detail

COHORT-LEVEL PATTERN — The cohort signal is dir...

Ask a follow-up...

# Patient

LLM:

- Interprets
- Builds analysis plan

SQL:

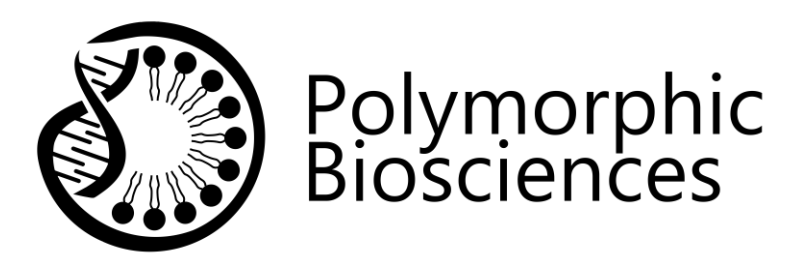
- Retrieval

Python:

- Computation

LLM:

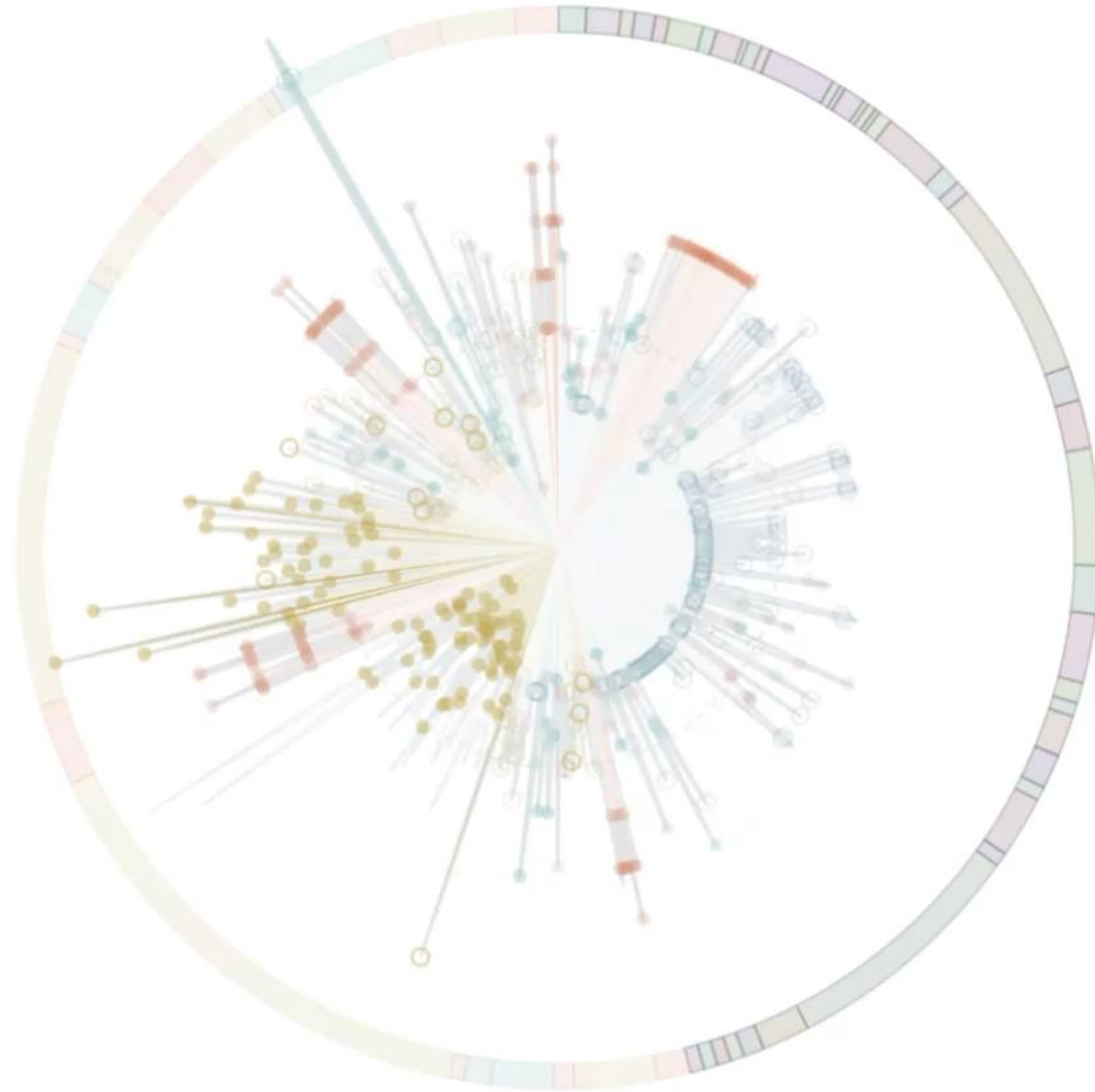
- Responds



# Health Silhouette

Shape reflects deviation from this patient's expected state, based on reference ranges and personal baseline

Showing 570 available measurements across 5 data sources.



Sep 15, 2025

### New Data

MYCO

### Top Changes

- Insulin-like growth factor-binding protein 3  
20.30 nM → 107.90 nM
- Fibulin-1  
150.40 nM → 537.60 nM
- Apolipoprotein B-100  
196.10 nM → 851.50 nM
- Vitamin K-dependent protein Z  
69.80 nM → 20.70 nM

### Top Deviations

- Thyroperoxidase Ab  
348 IU/mL · ref 0–35
- Natriuretic Peptide B Prohormone  
722 ng/L · ref 0–125
- HDLfx pCAD Score  
-4.56 · ref 0–0.9 · baseline -3.56
- Insulin-like growth factor-binding protein 3  
107.90 nM · ref 15.9–44.3 · baseline 64.10 nM



Sep 15, 2025

● LIFE ● CHL ● DEXA ● PRENUVO ● MYCO

ⓘ Interpretation guide

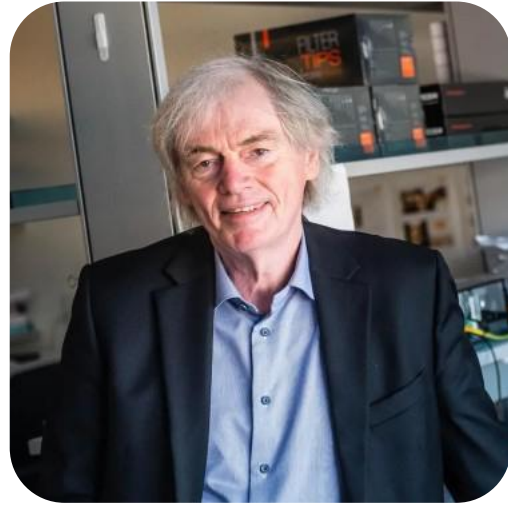
# Patient

# What is next?

- ▶ Deploy in one clinic this year
- ▶ Integrate into clinical workflow alongside clinicians
- ▶ Learn what works before scaling

- ▶ Any data can become computable with the right structure
- ▶ The tools to do this are becoming more accessible
- ▶ The opportunity extends beyond one clinic

# Polymorphic Biosciences



Pieter Cullis, PhD  
Founder, CEO



Owen Ip, MEng  
Software Developer



Mauricio Medrano, MD, PhD  
VP, Medical Affairs



Terri Petkau, PhD  
COO



Cedric Brimacombe, PhD  
VP, Business Development



Michael Hughes, PhD  
Director, Immunology



Evan Haney, PhD  
Senior Manager



Sara Deacon  
Executive Assistant



Ardalan Nabi, PhD  
Scientist



Madelaine Robertson, PhD  
Scientist

## Connect Health



Ashley Riskin, MD, CCFP  
Clinical Director/Co-Founder

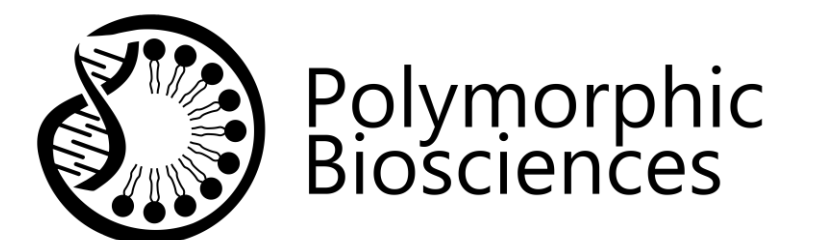


Lawrence Cheng, MD, CCFP(EM)  
Medical Director/Co-Founder

## Advisor



Martin Dawes, MD, FRCGP, CCFP  
Scientific Director/Founder, GenXys  
Professor Emeritus Family Practice, UBC



PRENUVO\_structured
LIFE
CHL

Right renal lesion enlarged alongside lower filtration

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Explore

Atherometabolic markers moved strongly in the right direction
CHL

Glucose-insulin physiology improved, but lean mass fell
CHL
LIFE
DEXA

Musculoskeletal imaging worsened, while prostate imaging improved
PRENUVO\_structured
LIFE

See all 440 new results →

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Explore

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Atherometabolic n

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Glucose-insulin pl

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Musculoskeletal ir

See all 440 new results -

Re-run New Results

AI-generated analysis — doe

Attention

Items requiring clinical review

#	ISSUE
> 1	Marked NT-proBNP e impairment
> 2	Stage 3a kidney funct confirmation
∨ 3	Elevated PSA with ris

Elevated PSA with ris

SUPPORTING EVIDENCE

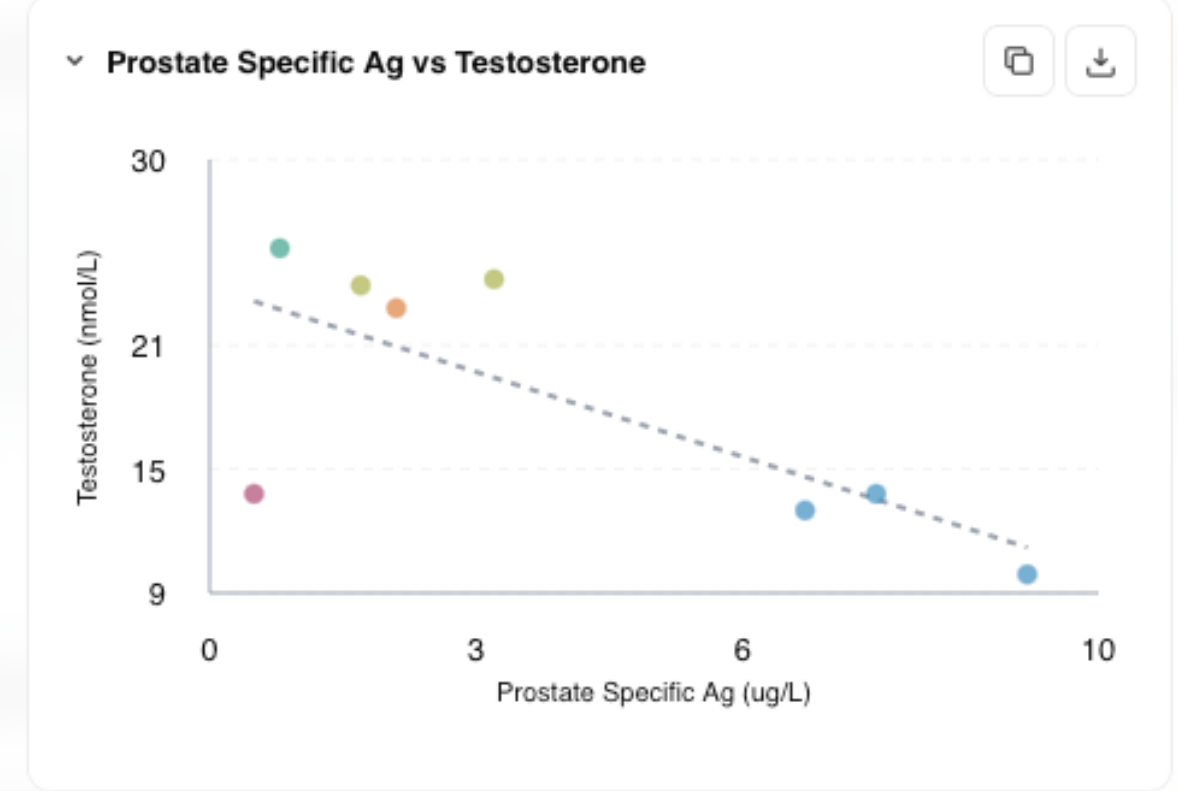
- PSA 7.6  $\mu\text{g/L}$ , above re
- Testosterone increas
- Latest testosterone 13

SUGGESTED REVIEW

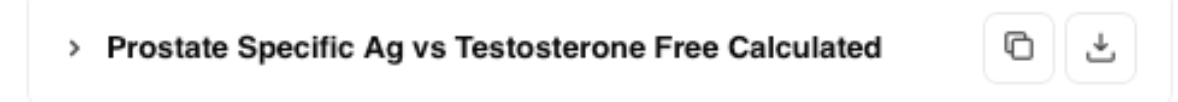
Repeat PSA with free/to

Explore + Trac

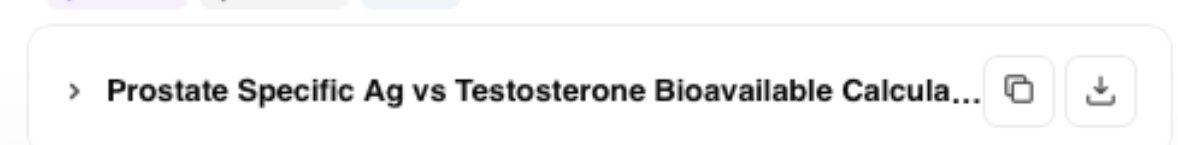
- > 4 Autoimmune thyroiditi TSH
- > 5 Mercury exposure above range with reduced renal reserve



Higher Prostate Specific Ag is associated with lower Testosterone Free Calculated — a moderate relationship. 6 paired measurements across 5 unique patients.  $\rho = -0.60$ ,  $p = 0.208$ . 5/5 patients (100%) had both variables measured. Samples from Aug 2023 to Mar 2025. Dots are coloured by patient.  $\rho = -0.60$   $p = 0.208$   $n = 6$

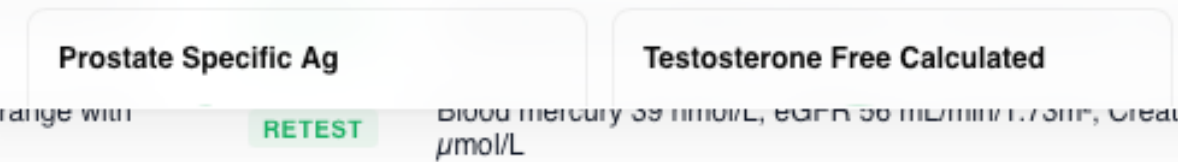
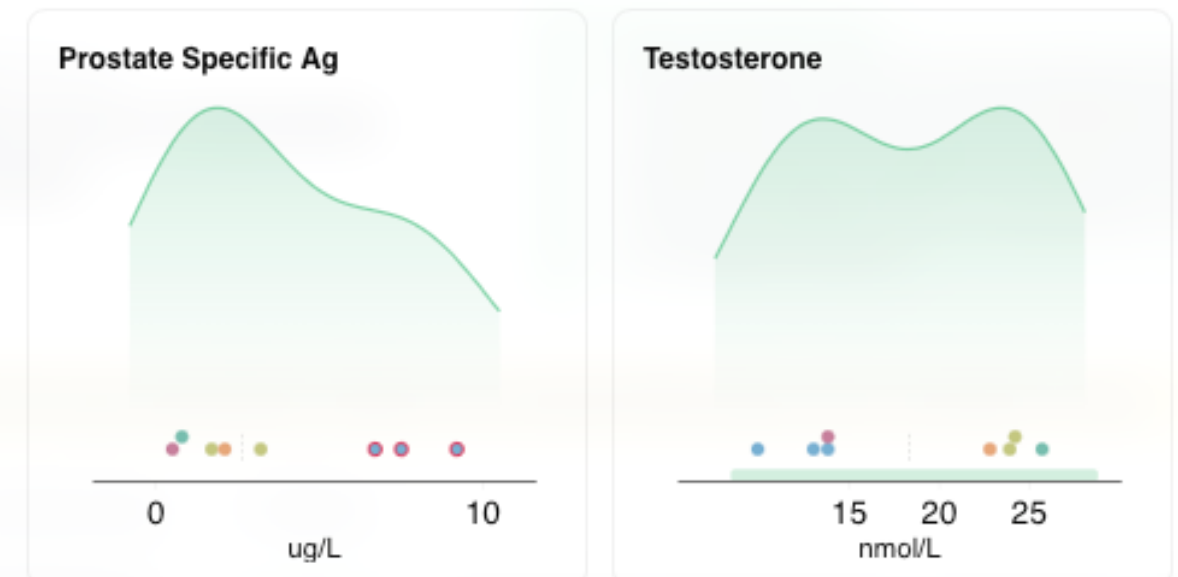


Higher Prostate Specific Ag is associated with lower Testosterone Bioavailable Calculated — a moderate relationship. 6 paired measurements across 5 unique patients.  $\rho = -0.55$ ,  $p = 0.257$ . 5/5 patients (100%) had both variables measured. Samples from Aug 2023 to Mar 2025. Dots are coloured by patient.  $\rho = -0.55$   $p = 0.257$   $n = 6$



Context

Cohort distributions for correlated variables. Dots are coloured by patient; green band shows visible reference range. Prostate Specific Ag (8 obs., 3 out of range ); Testosterone (8 obs., ref. 8.4–28.8); Prostate Specific Ag (6 obs., 2 out of range ); Testosterone Free Calculated (6 obs., ref. 115–577); Prostate Specific Ag (6 obs., 2 out of range ); Testosterone Bioavailable Calculated (6 obs., ref. 2.7–13.5)



Close, Maximize, Full Screen, Refresh icons

Here is a finding needing attention for patient 1: Title: Elevated PSA with rising testosterone Details: PSA elevation above the age-adjusted lab threshold warrants confirmation, and a concurrent testosterone rise can be relevant because androgen exposure can influence prostate volume and PSA kinetics. This pairing is more actionable than an isolated PSA flag. PSA 7.6  $\mu\text{g/L}$ , above reference <6.0; Testosterone increased by +3.9 over 3 measurements; Latest testosterone 13.8 nmol/L Please compare pairwise correlations and associations across the cohort for the named variables and show relevant trends.

Q1 Prostate Specific Ag vs Testos...

KEY TAKEAWAY

Across 5 male patients, PSA and testosterone show a moderate inverse correlation, not a positive one, but the estimate is unstable and not statistically significant because paired sample sizes are very small.

The dataset includes 15 PSA results, 9 total testosterone results, and 7 each for calculated free and bioavailable testosterone from LIFE, spanning 2023-08-31 to 2025-03-20. The key clinical outlier is Patient 1, who has persistently above-threshold PSA while testosterone rose modestly within the normal range.

- Hide detail
- PAIRWISE PSA-TESTOSTERONE CORRELATIONS — Exact-date pairi...
  - PSA ABOVE AGE-ADJUSTED REFERENCE THRESHOLD — Only Patient 1 ...
  - RELEVANT PATIENT-LEVEL TRENDS — Patient 1 — clinical...
  - CLINICAL READ — The standout finding remai...
  - LIMITATIONS — The main limitation is sam...

Ask a follow-up... →